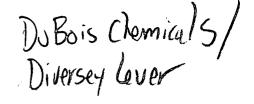
LOWENSTEIN SANDLER PC

Attorneys at Law



NORMAN W. SPINDEL Senior Counsel

Tel 973.597.2514 Fax 973.597.2515 nspindel@lowenstein.com

January 10, 2003

VIA CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Seth Ausubel, Remedial Project Manger US Environmental Protection Agency, Region II Emergency and Remedial Response Division 290 Broadway, 19th Floor New York, NY 10007-1866

Re: Berry's Creek Study Area, Bergen County, NJ

Request for Information Pursuant to 42 U.S.C. §9601, et seq.

Dear Mr. Ausubel:

On behalf of Rathon Corp, enclosed please find my client's responses to USEPA's September 256, 2002 letter in the above-referenced matter which, per agreement with Clay Monroe, Esq. were to be submitted no later than today.

Very truly yours,

Norman W. Spindel

N.W. Siele

NWS:imw D7522/14 01/10/03 1315158.01 Enclosure

cc:

Clay Monroe, Assistant Regional Counsel (w/enc.)

Roseland New Jersey

07068-1791

David Van Maele (w/enc.) Kristina Pasko (w/o enc.)





Response of Rathon Corp to the

USEPA Request for Information Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq. re: The Berry's Creek Study Area, Bergen County New Jersey

INTRODUCTION

Rathon Corp (formerly known as Diversey Corp.) ("Rathon") submits this response to the CERCLA §104(e) request dated November 5, 2002 from the United States Environmental Protection Agency ("EPA") regarding the Berry's Creek Study Area, Bergen County, New Jersey (the "Study Area"). Rathon reserves the right to supplement this response should any additional responsive information be discovered.

Rathon has endeavored to answer the questions in EPA's letter to the extent feasible in a reasonable, timely, and responsive manner, based on a diligent review of available records and interviews of potentially knowledgeable current and former employees. The enclosed information is being submitted in an effort to cooperate with EPA; however, nothing in this response should be interpreted as an admission of any liability or responsibility on the part of Rathon concerning the Study Area. Rathon reserves all rights and defenses available to it under the law.

GENERAL OBJECTIONS

Rathon objects to the Request as overly broad, not reasonably relevant, unduly burdensome, and beyond the scope of authority granted EPA under CERCLA § 104(e)(2). Without limiting this objection, examples of the objectionable portions of EPA's Request include questions related to Rathon's and its affiliate's officers and employees (Nos. 1.b. - 1.f); its relationship with other business entities that may have owned and/or operated Rathon's former East Rutherford facility (No. 6); its local, state and federal permits (No. 10); its vendors of materials used at the facility (No. 18); and additional, unidentified information that might be relevant to EPA's inquiry (No. 20). Rathon also objects to the requests for individual's home addresses and telephone numbers when business addresses and telephone numbers are provided. Similarly, the request for a person's title, position, occupation or business is overly broad and not reasonably relevant when other identifying information is provided. Rathon also objects to this request as beyond the scope of the authority granted in §104(e) and unduly burdensome, to the extent that it attempts to impose an indefinite continuing duty to search, update and further respond to these requests.

Despite the fact that Rathon believes that many aspects of the request are objectionable as set forth above and below, Rathon has made a diligent, good faith effort to answer EPA's questions, and believes its response demonstrate that Rathon is not a potentially responsible party with regard to any conditions in the Study Area other than those that it is addressing pursuant to an administrative case currently being overseen by the New Jersey Department of Environmental Protection ("NJDEP") pursuant to the New Jersey Industrial Site Recovery Act. This case is designated Case Number E91127, and hereinafter will be referred to as the "ISRA Case."

These General Objections apply to and are incorporated by reference with respect to each of the questions that follow, unless otherwise noted, and are not waived notwithstanding the further

responses provided by Rathon below. Subject to and without waiving these objections, Rathon responds as follows:

GENERAL SCOPE OF RESPONSE

EPA's request for information was addressed to DuBois Diversey Lever. The ownership and operation of the facility located at Union Avenue and DuBois Street in East Rutherford, New Jersey (the "Facility") has changed numerous times during the past 45 years. (See Response to Question 4.) The ownership and operation of the Facility by DuBois Co., Inc., and its successors however ended in January 1993 when the assets and property located in East Rutherford were sold to the Diamond Chemical Company. At that time, the seller was Diversey Corp., whose name subsequently was changed to Rathon Corp. The Facility was never owned nor operated by DuBois Diversey Lever, if any legal entity by that name ever existed. This response is provided by Rathon Corp.

REQUEST FOR INFORMATION

1. a. State the correct legal name and mailing address of your Company

Rathon Corp, 2350 Franklin Road, Suite 230, Bloomfield Hills, MI 48302.

b. Identify the legal status of your Company (corporation, partnership, sole proprietorship, specify if other) and the state in which your Company was organized or formed.

Rathon is a Delaware corporation.

c. State the name(s) and address(es) of the President, Chairman of the Board, and the Chief Executive Officer of your Company.

President: Brian Burden, 1555 Notre Dame East, Montreal, Quebec, Canada H2L 2R5.

There is no designated Chairman of the Board or Chief Executive Officer.

d. If your Company is a subsidiary or affiliate of another corporation, or has subsidiaries, identify each such entity and its relationship to your Company, and state the name(s) and address(es) of each such entity's President, Chairman of the Board, and Chief Executive Officer.

Rathon has one subsidiary, DUHI Inc., which currently is inactive.

Rathon is a wholly-owned subsidiary of 3255085 Canada Inc. whose mailing address is 1555 Notre-Dame Street East, Montreal, Quebec, H2L 2R5 Canada.

Its registered address is 33 Carlingview Drive, Etobicoke, Ontario, M9W 5E4 Canada.

President: Brian Burden

There is no designated Chairman of the Board or Chief Executive Officer.

e. Identify the state and date of incorporation and the agent for service of process in the state of incorporation and in the State of New Jersey for your Company and for each entity identified in your response to question 1.d., above.

Rathon, incorporated on February 17, 1981, is a Delaware corporation whose registered agent is The Corporation Trust Company, 1209 Orange St., Wilmington, DE 19801. 3255085 Canada Inc. is a Canadian corporation who does not have an agent for service in the United States. Rathon does not have an agent for service of process located in New Jersey.

f. If your Company is a successor to, or has been succeeded by another entity, identify such other entity and provide the same information requested in question 1.e., above.

Rathon Corp formerly was known as Diversey Corp. See the Response to Questions 1.a - 1.e.

2. Provide a description of the Site, i.e. the property or properties in East Rutherford, Bergen County, New Jersey, which your Company owned or owns, or upon which it operated or leased, or currently operates or leases. Include Block and Lot Numbers, names of streets or physical features bounding the property(ies), and acreage.

Rathon formerly owned and operated the property located at Union Avenue and DuBois Street in Bergen County, East Rutherford, New Jersey 07037. The site covers a total area of approximately 6.9 acres and was designated as Block 102C, Lots 2D, 2E, 2F on the tax maps of East Rutherford at the time of the sale of the Facility to Diamond Chemical Company, Inc. in 1993.

3. Provide a narrative description of the nature of the Company's business. If the nature of the Company's business changed over time, please explain how it changed, (including any name changes) and approximately when the changes occurred.

The plant commenced operation in 1958 following its development on the site of a former landfill. Prior to September 27, 1991, the East Rutherford plant manufactured and produced cleaning compounds, soaps, detergents. Products included laundry, dishwashing detergents, wastewater treatment chemicals, caustic and solvent-based paint strippers, phosphatizing chemicals, sanitizers, and soap-based lubricants for the food industry. Complete information on the products produced and the raw materials used historically at the plant are not available. Subsequent to this date, Rathon used the Facility solely for the interior warehousing of finished goods produced and packaged elsewhere

The manufacturing and processing operations generally involved the mixing and blending of raw materials, either liquid or powder, in processing kettles. During the plant's early operations, its products were exclusively powders. As of April 1991, 90% of the plant's products were liquids, and 10% were powders. At one time herbicides and pyrethrin pesticides were formulated at the site. In April of 1991, the Facility utilized over 300 raw materials including acids, bases and polymeric wetting agents. Until approximately 1987/1988, various chlorinated volatile organic compounds, including methylene chloride, 1,1,1-trichoroethane, tetrachloroethylene, and ethylene dichloride were used at the site. The use of these materials was discontinued because of wastewater discharge permit compliance issues. The use of petroleum-based raw materials, including mineral spirits and kerosene, was discontinued in January 1990.

As of early 1991, manufacturing operations at the site are summarized as follows. Raw materials from drums, bags, or storage tanks were loaded into tanks and weighed, then dispensed into kettles according to product formula and compounded with agitation and heating or cooling. Finished products were gravity-fed into containers ranging in size from 330-gallon portable tanks to 1-gallon bottles or pumped into 12 interior 2,750-gallon fiberglass storage tanks. The plant had 19 production kettles which ranged in size from 550 gallons to 4,500 gallons. Dry products were mixed in one of four ribbon blenders, discharged into hoppers and then packaged into containers ranging from 6-gal. pails to 55-gal. drums.

The Facility did not have underground storage tanks. It is reported that aboveground storage tanks first existed at the Facility in the late 1950's/early 1960s. There were 3 tanks located at the south end of the manufacturing building utilized for the storage of caustic potash, phosphoric acid and butyl cellosolve. Thereafter, these tanks were moved and located on the eastern side of the property. Through the years, additional tanks were located in this area. A dike was placed around these tanks in the 1980's. At various times, the tanks were used to store mineral spirits, coconut fatty acid, methylene chloride, caustic soda, caustic potash, phosphoric acid, polymeric wetting agents, and butyl cellosolve; one tank was used to store diesel fuel oil for a back-up generator. As of early 1991, 22 tanks in a diked tank farm located on the eastern side of the Facility were used for liquid raw materials storage.

The Facility boilers were heated by natural gas, with No. 4 fuel oil as backup. In the fuel oil storage area, there were two tanks, one for No. 4 fuel oil, and the other for kerosene storage until January 1990.

Other storage equipment consisted of an interior 5,000 gallon fiberglass tank used for the storage of sodium hypochlorite. Five exterior silos were used for the bulk storage of powdered raw materials. Two were used for the storage of sodium tripolyphosphate, one for sodium sulfate, one for soda ash, and one for caustic soda beads.

Powdered finished products were shipped offsite by rail until 1980. Raw materials were occasionally delivered by rail car until approximately 1990. As of April 1991, all raw materials stored in bulk were delivered by tanker truck. Raw materials not stored in bulk

were received and stored in 55-gallon metal or plastic drums, paper sacks, and cardboard drums inside the plant building.

Returned and "off-spec." materials were stored at the south end of the site in exterior storage areas. Hazardous wastes were also stored south of the building in an exterior storage area. These areas were paved with concrete, and sloped to a perimeter trench drain system that conveyed runoff to a sump which then pumped the runoff to the process wastewater treatment tank. Empty drums were stored outside in an area southwest of the building.

Waste disposal did not occur on site. Beginning in 1987, non-contact cooling water and process wastewater were discharged to the Bergen County Utilities Authority ("BCUA"). Waste oil, oil compressor condensate, shipments of oily waste water and general trash were shipped offsite for treatment/disposal.

Emissions from plant productions were controlled by air pollution control equipment authorized by NJDEP - issued permits to construct/certificates to operate. Solids (from dry materials processing) collected by this equipment were mixed with water for use in cleaning plant equipment.

As' of September 27, 1991, Diversey Corp. became the legal successor to DuBois Chemicals, Inc. and the operator of the East Rutherford facility. At that time, the Facility was utilized exclusively for the interior warehousing of finished goods produced and packaged elsewhere. Finished product was stored in the original packaging produced at the offsite manufacturing location. Repackaging was performed. The receipt and shipment of finished products occurred solely within the interior of the warehouse, thereby avoiding exposure of stormwater to stored materials.

4. Please specify the time period during which the Company leased, owned, and/or operated the Site. If the Company leased, owned or operated at portions of the Site, specify the time periods of such involvement, and appropriate block and lot numbers. If your Company ever leased the Site, provide copies of leases, names, current addresses and telephone numbers of each owner of the Site during the period the Company leased the Site.

Rathon owned and operated the site from approximately September 27, 1991 to January 15, 1993 when it sold the Facility, including the real estate, to Diamond Chemical Company, Inc.

5. Describe the Site at the time the Company took possession of it. If there was any business at the Site, explain the nature of that business.

See response to Question No. 3.

6. Describe in detail the nature of the relationship between the Company and each of the following entities: (1) Chemed Corporation; (2) Diversey Corporation; (3) Diversey Lever; (4) DuBois Chemicals; and (5) W.R. Grace and Company. Indicate the time and manner in which the relationships were established. Specifically address

the relationship as pertaining to any current or past operations or ownership at the Site.

Operations at the Facility were begun in approximately 1957 by DuBois Co., Inc. In 1961, the company became DuBois Chemicals, Inc., a Delaware corporation. In 1964, DuBois Chemicals became of division of W.R. Grace. The division then was sold to Chemed Corp. in 1971. In 1987, the operator/owner of the Facility became DuBois Chemicals, Inc. On September 27, 1991, DuBois Chemicals, Inc. merged with Diversey Corp. with Diversey Corp. surviving. On April 1, 1996, substantially all of Diversey Corp.'s assets were sold to Diversey Lever, Inc. Thereafter, Diversey Corp. changed its name to Rathon Corp.

- 7. Describe in detail the nature of the activities conducted by the Company at the Site from the time the Company began operations at the Site until the present time, including:
 - a. the services performed at the Site;
 - b. all products which the Company manufactured, supplied, or sold which resulted from activities at the Site;
 - c. research and development activities; and
 - d. the time period during which those activities occurred.

See answer to Question No. 3.

8. Did your Company cease operations at the Site? If so, when? Describe the circumstances that precipitated your Company's decision to cease operations at the Site.

On September 27, 1991, Diversey Corp. became the legal successor to DuBois Chemicals, Inc. and became the operator of the East Rutherford facility. Subsequent to September 27, 1991, Rathon used the Facility solely for the interior warehousing of finished goods produced and packaged elsewhere. Rathon sold the operating plant and real estate to Diamond Chemical Company, Inc. on January 15, 1993 due to strategic business decisions.

9. Did your Company generate hazardous wastes at the Site, or does your Company currently do so? Please describe your Company's treatment, storage and/or disposal practices for any hazardous wastes generated at the Site.

Rathon did not dispose of wastes on-site. Every effort was made to reprocess "off-spec." product that could not be shipped to customers after initial production. The Facility used operating procedures common to the industry for storage of hazardous wastes, if any, prior to shipment off-site. Prior to the enactment of State and federal solid and hazardous waste regulatory programs, most rejected and returned products which could not be reprocessed were discharged to the Triborough Joint Meeting POTW. Following enactment of these requirements, wastes were transported off-site to State approved or otherwise licensed treatment, storage and/or disposal facilities in compliance with regulatory requirements, including those relating to manifesting. The Facility did have a

hazardous waste ID number (NJD 081898819) for use in shipment of hazardous wastes off-site. Waste oil and oil compressor condensate were sent offsite. Oily wastewater that was not sent to a municipal POTW also was shipped offsite. General trash was compacted and picked up by a local hauler. Sanitary wastes from the site were discharged untreated, through a dedicated line, into the sanitary sewer system. Storm water from external material storage and handling areas also was directed to the process wastewater system.

Prior to the use of the Facility solely for distribution of product manufactured at other locations, process wastewater was collected in trench drains lined with acid resistant brick and furan grouted joints. The process effluent was conveyed to sumps that were similarly lined, and then pumped to a main sump that also was lined with acid brick. From this sump, the process wastewater was pumped to two 15,000-gallon wastewater holding and treatment tanks located at the exterior (southwestern side) of the Facility. In approximately 1986, a neutralization (typically acid addition) pre-treatment process was initiated at the Facility; prior thereto, no pretreatment was performed. Until approximately 1988, the wastewater effluent was discharged to the Triboro Joint Meeting Sewage Treatment Plant in East Rutherford. Thereafter, the effluent went to the Bergen County Utilities Authority ("BCUA") POTW.

10. Provide a list of all local, state and federal environmental permits ever granted for the Site or any part thereof (e.g., RCRA permits, NPDES permits, etc.)

As of October 14, 1991, the following permits were effective for the Facility. Copies or evidence of these permits are included in Attachment A.

Local Permit:

BCUA sewer permit No. 90-126

Borough of East Rutherford permit No. 02812

State Permits:

New Jersey Pollution Discharge Elimination System Permit for Significant Industrial Users, No. NJ0035769.

Certificates to Operate Control Apparatus or Equipment, issued by NJDEP Division of Environmental Quality Air Pollution Control Program: Nos. 007841, 061456, 013456, 030907, 013457, 084985, 088941

NJDEP Permit Treatment Works Approval Construction and Operation Permit No. 90-4819-4L, issued to DuBois Chemicals, Inc., 2/6/91

NJDEP Division of Water Resources Treatment Works Approval Construction and Operation Permit No. 90-4473-4N.

NJDEP Division of Water Resources Physical Connection Permit No. 857 issued to DuBois Chemicals April 1990.

- 11. List all hazardous substances (as defined in the "Instructions"), which were, or are, used, stored, or handled at the Site.
 - 1. Hazardous Substance and Waste Inventory, Attachment 7 to the ECRA Case No. 91157 Site Evaluation Submission (October 14, 1991) is a listing of hazardous substances present at the East Rutherford property following Rathon's acquisition of the Facility.
 - 2. Tables 1 (Raw Material Tank Storage 1987), 2 (Hazardous Substance Inventory), and 3 (SARA Title III/OSHA-Haz/Com Raw Material List), Preliminary Environmental Assessment of DuBois Chemicals' New Jersey Facility, by Woodward-Clyde Consultants (Sept. 1987) is a listing of hazardous substances during DuBois Chemicals, Inc.'s ownership and operation of the Facility. See Attachment B.
- 12. State when and where each substance identified in your response to Question 11 was, or is, used, stored, or handed at the Site and the volume of each substance.

See answer to Question Nos. 3 and 11.

13. Describe in detail how and where the hazardous wastes, industrial wastes, and hazardous substances generated, handled, treated, and stored at the Site were, or are, disposed of. If any hazardous wastes, hazardous substances, or industrial wastes were, or are, taken off-site for disposal or treatment, state the names and addresses of the transporters and the disposal facility used.

See answer to Question No. 9. A review of available Company records indicates the following transporters and disposal facilities. No review of telephone directories or other publicly available address records was conducted in answering this question.

Transporters:

Ashland Chemical Co.

Nappi Trucking Corp.

B&P Waste Brokers, Oakland, NI

Disposal Systems Inc.

Treatment, storage, disposal operators (information as of April 1990):

Bergen County Utilities Authority, Foot of Mehrhof Road, Little Ferry, NJ 07643

Solvent Recovery Service of New Jersey, Inc., 1200 Sylvan Street, Linden, NJ 07035

S&W Waste, Inc., 105 Jacobus Ave., South Kearney, NJ 07032

Safety Kleen Corp., 1200 Sylvan Street, Linden, NJ 07036

Chem Met, Wyandotte, MI

Sussex Barrel & Drum Corp., 86 Alvergne Street, Belleville, NJ 07109

Lionetti Oil, Old Bridge, NJ

E. I. duPont de Nemours & Company, Deepwater, NI

Aetna Chemical Corp., Wallace Street Extension, Elmwood Park, NJ 07407

14. Who determined, or determines, where to treat, store, and/or dispose of the hazardous substances and/or hazardous wastes handled at the Site? Provide the names and current or last known addresses of any entities or individuals which made such determination.

Angelo Pennisi, 4 Leslie Ct., Morris Township, NJ 07961.

15. Describe in detail the remedial activities conducted at the Site under CERCLA, the Resource Conservation and Recovery Act (RCRA), and/or laws of the State of New Jersey. Describe your Company's involvement in the remedial activities.

A number of transactions/events triggering the requirements of the New Jersey Industrial Site Remediation Act (formerly the Environmental Cleanup and Responsibility Act ("ISRA") have occurred at the Facility since 1987. These cases have been consolidated under ISRA Case No. #91127. In accordance with NJDEP requirements, Rathon and its predecessors-in-interest have undertaken the assessment, investigation and remediation of contaminants in soils and groundwater in excess of New Jersey's soil cleanup criteria and groundwater quality standards.

As for soils, PCBs were discovered in the tidal ditch on the eastern side of the property. The source is believed to be a former utility-owned transformer located adjacent to the tidal ditch operated to supply electricity to the Facility. In 1998, an NJDEP-approved remedial action consisting of removing PCB-contaminated sediments from the ditch adjacent to a portion of the Facility was performed. The impacted area did not extend as far north as Union Avenue nor as far south as the southern border of the Facility. Excavated materials were sent to CWM Chemical Services, LLC, of Model City, NY. Results of laboratory analysis confirmed that the excavation successfully removed the PCB-containing sediments from the tidal ditch.

The ISRA investigation also identified metals and petroleum hydrocarbons above NJDEP cleanup criteria. However, these contaminants result from the in-filling of the property prior to its development in 1958. NJDEP has approved leaving these contaminants in-place and utilizing engineering controls (permeable and impermeable caps) and institutional controls (deed notice) at the affected areas.

An investigation of groundwater at the Facility has revealed the presence of only methylene chloride below the Facility in concentrations of concern to NJDEP. The extent of impacted groundwater is limited to a small portion of the Facility on the eastern side of the property below the area between the tank farm on the eastern property boundary and the manufacturing building. The plume is predominantly located below the concrete drive between the tank farm and the building; it extends westward for a short distance under the building. The plume has not migrated to any offsite location. Enhanced in-situ bioremediation will be utilized to remediate the impacted groundwater.

- 16. Identify all leaks, spills, or releases into the environment of any hazardous substances, pollutants, or contaminants that have occurred, or are occurring, at or from the Site: Specifically identify and address any leaks, spills, or releases to the Berry's Creek Study Area. Identify:
- a. when such releases occurred;
- b. how the releases occurred;
- c. the amount of each hazardous substances, pollutants, or contaminants so released (for substances contained in any sewage effluent from the Site, provide discharge monitoring reports or other data indicating discharge concentrations and loads, as available);
- d. where such releases occurred;
- e. where such releases entered the Berry's Creek Study area, if applicable; and
- f. the pathway by which such releases entered the Berry's Creek Study area, including any storm sewers, pipes, or other conveyances discharging to a water body or wetland; or via surface runoff, groundwater discharge, or any spills, leaks, or disposal activities.

A 1987 report prepared by environmental consultants for DuBois Chemicals reported that from 1958 - 1967, process wastewater was discharged to the tidal ditch adjacent to the eastern property boundary prior to the plant being connected to the local sewerage system. The connection to the municipal sewerage system became blocked for approximately 4 days, resulting in direct discharge to the tidal ditch. Prior to 1980, the tank farm on the eastern side of the Facility did not have a containment. In 1981, it was discovered that a leak in the diked wall of the tank farm was allowing potentially contaminated storm water to discharge to the tidal ditch east of the Facility. Finally, it is reported that soda ash episodically was spilled on the eastern site of the Facility during bulk unloading operations.

In early January 1984, notification to the NJDEP was made of the bursting of a pipe leading from the process effluent interceptor pit. On or about September 1, 1988, a break in the subsurface piping carrying process effluent wastewater to the municipal sewerage system occurred. A subsequent investigation of the soil in the area of the break did not reveal the presence of contamination above State levels of concern. In March 1991, notification was made to NJDEP as part of the ISRA Case No. 91127 case of the

"discovery" of site conditions which may have been associated with historic spills or releases. No action by NJDEPE resulting from this notification has occurred. NJDEP again was notified on January 15, 1992 during the ISRA investigation of the presence of petroleum hydrocarbons in soils and groundwater at the Facility.

NJDEP's requirements for site remediation under ISRA required Rathon and its predecessor-in-interests to investigate the soil and groundwater below the Facility to ensure that it does not pose a threat to human health and the environment. Any adverse consequences of the events identified above would have been part of the ISRA investigation that has been completed to NJDEP's satisfaction. See the answer to Question 15 for a discussion of the only remedial activities NJDEP has required.

17. Please complete the form on page 5, below. Indicate on the form whether each of the chemicals listed has ever been released from the Site to the Berry's Creek Study area, including creeks, ditches, or other water bodies, or wetlands. Follow all additional instructions on the form. In addition, please answer Question 16, above, specifically addressing any chemicals for which you answered "yes".

The form on Page 5 has been completed using soil and groundwater sampling data obtained in ISRA Case No. 91127.

"Yes" has been checked for chemicals that have been detected in site sampling above NJDEP soil cleanup criteria or groundwater quality standards. However, this notation is not intended to indicate that the chemical was released from the Facility or to indicate that if such release occurred, to identify the time or period of such release or the person responsible for any release that may have occurred. In fact, there is no evidence that a number of the chemicals so identified in the table were used at the Facility. Moreover, the Facility is known to have been built on a former landfill. The detection of any contaminant during the ISRA case is only confirmation that the contaminant exists at the property. It does not provide any information regarding the identity of the party responsible for the contaminant or the cause of the contaminant being present.

All metals, except for arsenic, marked "yes" are associated with the presence of urban fill emplaced in the shallow subsurface of the Facility during its development in the late 1950's. All PAHs marked "yes" are from one soil/sediment sample collected at the historic wastewater outfall, and is attributable to buried construction material (asphalt, roofing tar, etc.) in this area and the numerous railroad ties found in the eastern tidal ditch.

"No" has been checked when the ISRA sampling has not identified the presence of the specific chemical during the ISRA investigation. "N/A" has been checked in instances where the specific chemical was not included in the analyses performed during the ISRA case.

18. Identify all companies, firms, facilities, and individuals (hereafter referred to as "customers") from whom your Company obtained, or obtains, materials containing Industrial Waste as defined in Number 6 of the Definitions and whose Industrial Waste was, or is, treated, stored, handled or disposed of at the Site. For each such customer:

- a. Describe the relationship (the nature of services rendered and products purchased or sold) between your Company and the customer;
- b. Provide Copies of any agreements and/or contracts between your Company and the customer;
- c. Provide the name and address of each customer who sent such materials, including contact person(s) within said customer;
- d. Provide shipping and transaction records pertaining to such Industrial Wastes sent by each customer, including but not limited to invoices, delivery receipts, receipts acknowledging payment, ledgers reflecting receipt of payment, bills or lading, weight tickets, and purchase orders; and
- e. Provide the name and address of all companies and individuals who transported, or transport, Industrial Wastes to the Site.

Rathon objects to the broad definition of Industrial Wastes as inferring that the Facility was utilized for the handling, storage, treatment and/or disposal of "wastes" as the word is commonly interpreted. In fact, the Facility was not utilized in this manner at all, as discussed in the answer to Question No. 3, and did not accept "wastes" as the word is commonly understood except in very specific circumstances. When a salesman or customer requested that a product be returned to the Facility, it had to receive approval from the Facility laboratory. When this "returned product" was received, it was considered "rework" until, based on its age, chemical or physical condition, it could not be reprocessed. At that time, it was first classified as a waste and handled in accord with applicable regulatory programs.

Notwithstanding this objection, Rathon provides MSDS sheets (Attachment C) for raw materials/feedstocks to Facility.

- 19. For each customers' Industrial Wastes handled, treated, stored, or disposed of at the Site, describe:
 - i. the volume;
 - ii. the nature:
 - iii. chemical composition;
 - iv. color:
 - v. smell;
 - vi. physical state (e.g., solid, liquid)
 - vii. any other distinctive characteristics; and
 - viii. the years during which each customer's materials were handled, treated, stored, or disposed of at the Site.

See the answer to Question 18.

20. Please supply any additional information or documents that may be relevant or useful to identify other companies or sources that sent Industrial Wastes to the Site.

See answers to previous questions.

21. Please state the name, title and address of each individual who assisted or was consulted in the preparation of your response to this Request for Information and correlate each individual to the question on which he or she was consulted.

Each of the following assisted in the response to a question(s) regarding the entities that operated at the Facility and their relationship to each other:

Mark J. Hanket JohnsonDiversey 26935 Northwestern Highway Southfield, MI 48034

Marie Giguere
Senior Vice President and Chief Legal Counsel
Molson Inc.
1555 Notre-Dame Street East
Montreal, Quebec
H2L 2R5
Canada

David Van Maele Vice President Rathon Corp 2350 Franklin Road Suite 230 Bloomfield Hills, MI 48302

The following persons have assisted in answering questions regarding the operational history of the Facility and the conditions resulting therefrom:

James J. Bulman Senior Vice President Environmental Strategies Corporation 11911 Freedom Drive, Suite 900 Reston, VA 20190

Jim Walsh HSE Manager JohnsonDiversey 880 Crowe Road East Stroudsburg, PA 18301 Angelo Pennisi 4 Leslie Ct. Morris Township, NJ 07961

Outside counsel to Rathon assisting in the preparation of the responses to all questions:

Norman W. Spindel Lowenstein Sandler PC 65 Livingston Avenue Roseland, NJ 07068

Kristina D. Pasko Lowenstein Sandler PC 65 Livingston Avenue Roseland, NJ 07068

22. For each question herein, identify all documents consulted, examined, or referred to in the preparation of the answer or that contain information responsive to the question and provide true and accurate copies of all such documents.

Approximately 40 Banker boxes of files located at the firm of Lowenstein Sandler PC, Roseland, NJ were reviewed in addition to miscellaneous historic records provided by Messrs. Walsh and Bulman were reviewed in preparing these responses. Much of the relevant information utilized for providing these responses is part of the public record at the New Jersey Department of Environmental Protection in ISRA Case No. 91127. Rathon objects to providing copies of these documents on the basis that they are voluminous and that the vast majority of the documents reviewed do not provide relevant information responsive to EPA's information request. Portions of the documentation reviewed that is responsive is included in the Appendices to these responses.

Request for Information Regarding Chemical Releases to the Berry's Creek Study Area

<u>Instructions</u>: As instructed in Question 17, please complete this form by marking the appropriate spaces. Indicate whether each of the chemicals listed has ever been released from the Site to the Berry's Creek Study Area, including creeks, ditches, or other water bodies, or wetlands. Follow additional instructions below. Return the completed form along with your other responses to the Request for Information in the Matter of the Berry's Creek Study Area, Bergen County New Jersey, N/A Signifies no information available.

	Yes	No	N/A
acenaphthene		х	
acenaphthylene		X	
anthracene		х	
aluminum	*	* /	X
antimony		X	
arsenic	X		in A
benzo(a)anthracene	X		
benzene	x		
benzo(a)pyrene	X		l
benzo(b)fluoranthene	X	· 9 5 2 34 4 46	
benzo(g,h,I)perylene		x	
benzo(k)fluoranthene	a q s	X	
bis(2-ethylhexyl)phthalate		x	
butyl benzyl phthalate	1 ×	X	
cadmium	x		
chlorinated dibenzo-p-dioxins (if			x
"yes", please list specific dioxin			
compounds on a separate sheet			9 3 3 .
chlorinated dibenzofurans (if			x
"yes", please list specific com-			<u> </u>
pounds on a separate sheet)			
chlorobenzene	x		*
chloroform	х		
chromium		x	
chrysene		х	
copper	x		4
cyanide		х	
dibenz(a,h)anthracene		X	
dichlorobenzene		x	
1,2-dichloroethene	* X		4 + >
di-n-butyl phthalate		x	
1,2-dichlorobenzene		X	
1,2-dichloroethane	х		
dieldrin			X
di-n-octyl-phthalate		x	
ethylbenzene		X	
fluoranthene		х	<u> </u>

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<u>David Van Maele</u> Name of Person completing form Rathon Corp

DuBois Chemical Site

Company

Site (as defined in the "Instructions")

Response of Rathon Corp to the USEPA Request for Information Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq. re: The Berry's Creek Study Area, Bergen County New Jersey

Permits (see question 10 above)

Borough of East Rutherford permit No. 02812

New Jersey Pollution Discharge Elimination System Permit for Significant Industrial Users, No. NJ0035769.

Certificates to Operate Control Apparatus or Equipment, issued by NJDEP Division of Environmental Quality Air Pollution Control Program: Nos. 007841, 061456, 013456, 030907, 013457, 084985, 088941

NJDEP Permit Treatment Works Approval Construction and Operation Permit No. 90-4819-4L, issued to DuBois Chemicals, Inc., 2/6/91

NJDEP Division of Water Resources Treatment Works Approval Construction and Operation Permit No. 90-4473-4N.

NJDEP Division of Water Resources Physical Connection Permit No. 857 issued to DuBois Chemicals April 1990.

Office: (201) 641-2552 meant: (201) 641-2555 Fax: (201) 641-6407



UTILITIES AUTHORITY

Box 122, Foot of Mehrhof Road, Little Ferry, New Jersey 177847

LARRY J. McCLURE Executive Director

VERNON R. COX, Chairman
MICHAEL P. RINKO, Vice Chairman
EUGENE D. BECKEN
EUGENE J. BROPHY
HERBERT GORAB
ROSE HECK
POGER J. LANE
SHERWIN D. LESTER
MICHAEL B. SCADUTO

June 22, 1990

Mr. Virgil W. Rice DuBois/Chemed Chemical DuBois Tower Cincinnati, Ohio 45202

RE: Industrial Pretreatment Program
Industrial Wastewater Discharge Permit

Dear Mr. Rice:

In accordance with the Authority's Industrial Pretreatment Program and past correspondence concerning the above referenced matter, please find enclosed one (1) copy of your Industrial Wastewater Discharge Permit. We recommend that you familiarize yourself with all the permit requirements.

Please be advised that your Annual Permit Fee is \$2,520.00, and must be submitted within thirty (30) days of receipt of this letter.

If there are any questions, please do not hesitate to contact us.

Very truly yours,

BERGEN COUNTY UTILITIES AUTHORITY

SMM:rd Encl.

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STEVEN M. MIZEREK Principal Engineer

BERGEN COUNTY UTILITIES AUTHORITY INDUSTRIAL WASTEWATER DISCHARGE PERMIT

Permit No.: 90-126

Effective Date: 6/22/90

Expiration Date: 6/22/91

Company I.D. No.: 0375

Name and Address of Owner: DuBois Chemical

DuBois Tower

Cincinnati, Ohio 45202

Location of Activity/Facility: Union Avenue and DuBois Street

East Rutherford, New Jersey 07073

Type of Permit: Noncategorical/ 10,000 - 24,999 gpd

In accordance with all terms and conditions in the "Rules and Regulations for the Direct and Indirect Discharge of Wastewater to the Bergen County Utilities Authority Treatment Works", the provisions by which are incorporated in this permit, and applicable provisions of Federal and/or State regulation, permission is hereby granted to discharge industrial process wastewater into the Bergen County Utilities Authority Little Ferry Treatment Plant, via the Borough of East Rutherford sanitary sewer collection system, in accordance with wastewater discharge limitations, monitoring requirements, and other requirements set forth in the following tables hereof.

This permit is granted in accordance with the Industrial Wastewater Discharge Permit Application and Questionnaire and accompanying documentation, filed with the Authority, and are considered part of this permit.

Be advised that while the permit is in force, additional information may be required to be submitted and/or discharge limitations may be changed to reflect changes in applicable Federal, State and local regulations. The Permittee hereby agrees to the aforementioned.

STEVEN M. MIZEREK PRINCIPAL ENGINEER

BERGEN COUNTY UTILITIES AUTHORITY

Table - 1 Discharge Limitations

<u>Parameter</u>

Limitation

	Daily Maximum (mg/1)	Maximum Single sample (mg/l)
Arsenic (T)	0.050	0.250
Cadmium (T)	0.024	0.120
Chromium (T)	0.400	2.00
Chromium, Hexavalent	0.025	0.125
Copper (T)	1.0	5.0
Lead (T)	0.340	1.70
Mercury	0.012	0.060
Nickel (T)	0.732	3.660
Phenol	1.77	8.85
Silver (T)	0.050	0.250
Zinc(T)	7.16	35.80

Additional Parameters

Biochemical Oxygen Demand, BOD Suspended Solids, S.S.

pH
Total Kjeldahl Nitrogen
Ammonia Nitrogen
Cyanide (T)
Oil or Grease
Non-petroleum origin
Petroleum origin

Explosivity

Note: (T) = Total BCUA must be notified if over 350 mg/l BCUA must be notified if over 350 mg/l

5.5 - 9.5 Daily Range 200 mg/l Single Sample 100 mg/l Single Sample 0.50 mg/l Single Sample

200 mg/l Daily Maximum 100 mg/l Monthly Average 150 mg/l Single Sample 5% IEL any 2 successive Readings 10% IEL any 1 reading

Table - 2 Monitoring Schedule

The company being DuBois Chemical, shall monitor its effluent wastestream per the following schedule. All sampling and analysis shall be performed in accordance with 40 CFR Part 136 or the approved equivalent method.

Samples taken in compliance with the specified monitoring requirements shall be taken at the following location: Waste treatment pit, in treatment building.

During the months of: March and September

Parameter	Sample Type	Sample Frequency	Monitoring Prequency
pH Biochemical	Grab or Continuous	1 per 8 Hours or Continuous	, 3/30
Oxygen Demand Suspended Solids Total Kjeldahl	Grab Grab	1 per 8 Hours 1 per 8 Hours	3/30 3/30
Nitrogen Ammonia Nitrogen Oil or Grease	Grab Grab	1 per 8 Hours 1 per 8 Hours	3/30 3/30
Non-petroleum (Petroleum Zinc	Origin Grab Grab Grab	1 per 8 Hours 1 per 8 Hours 1 per 8 Hours	3/30 3/30 3/30

Table - 2 Monitoring Schedule (Con't)

Not later than fourteen (14) days following each month in the Monitoring Schedule the industrial user shall submit to Bergen County Utilities Authority a compliance report consisting at minimum of the following items:

- 1) Has the company name, ownership, contact person or authorized representative changed?
- 2) Average and maximum daily regulated wastewater flow, with an explanation of how obtained. (flow meter, volume displacement, water bills, etc.).
- 3) An accounting of each regulated pollutant by analysis.
- 4) A copy of the chain of custody form shall be included, as well as the date and time of initiation of analysis.
- 5) The name of the certified laboratory that performed the analysis.
- 6) A statement of consistent compliance or a compliance schedule.
- 7) The signature of an authorized representative.

PERMIT

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachmen accompanying same application, and applicable laws and regulations. This permit is also subject to the further condition and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit Permit No. Issuance Date Effective Date Expiration Date NJ0035769 Movember 13, 1984 January 1, 1985 December 31, 1989 Name and Address of Applicant Location of Activity/Facility Name and Address of Owner DuBois Chemicals Union Avenue & DuBois Street Division of Chemed Corp. East Rutherford, Bergen Co. Same as Applicant Union Avenue & DuBois Street New Jersey East Rutherford, N.J. Issuing Division Type of Permit Statute(s) Application No. N.J.S.A. Water Resources NJ0035769 SIU Indirèct Discharge 58:10A-1 et seq.

This permit grants permission to:

- 1. Discharge to Berry's Creek classified as TW-2 Waters in accordance with effluent limitations, monitoring requirements, and other conditions as set forth in Parts I, II, III and IV hereof.
- 2. Discharge industrial process wastewater through outfall GC3 into the Rutherford, East Rutherford, Carlstadt, Joint Meeting Sewage Treatment Plant under the conditions stated herein and the effluent limitations contained in Table I.

Approved by the Department of Environmental Protection By Authority of:

John W. Gaston, Jr., P.E.

Director

Division of Water Resources

Arnold Schiffman

11-13-84 DATE

Administrator

Water Quality Managemen

The word permit means "approval, certification, registration, etc."

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

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PERMIT NUMBER NJ0035769

Permittee

Co-Permittee

DIAMOND CHEMICAL CO., INC PAGE & SCHUYLER AVENUES LYNDHURST NJ 07071

Property Owner

DIAMOND CHEMICAL COMPANY, INC UNION AVENUE AT DUBOIS STREET EAST RUTHERFORD NJ 07094

Location of Activity

DIAMOND CHEMICAL COMPANY INC UNION AVENUE AT DUBOIS ST EAST RUTHERFORD NJ 07094

Current Authorization Covered By This Approval And Previous Authorization

Issuance

Effective

Expiration

- STORMWATER RUNOFF :GROUP I

11/13/1984 01/01/1985 12/31/1989

DISCHARGE TO: Berry's Creek via a ditch

This is a minor modification issued March 19, 1993 to update changes to the permittee and property owner name and address which were effective January 19, 1993.

By Authority of: COMMISSIONER'S OFFICE

DMINISTRATOR

WASTEWATER FACILITIES REGULATION PROGRAM

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NEW JERSEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

	t indicate your APC PLANT ID NUMBER
All Correspondence mus	indicate your APC FLANT ID NONDER

Certificate Number

007841

APC PLANT ID 00259

(Mailing Address)

(Plant Location)

DUBUIS CHEMICALS, INC 1100 DUBOIS TOWER

CINCINNATI

OH 45202

DUBOIS CHEMICALS, INC. UNION AVE & DU BOIS ST. EAST RUTHERFORD

Applicant's Designation of Equipment N.J. Stack No. 001

RAW MATERIALS WAREHOUSE No. of Stacks 001

No. of Sources 04 Expiration 04/18/93

Approval

04/18/68

Effective 04/18/78

PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPMENT AND CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT

⇔ AMENDMENT **⇔**

THIS PERMIT AND CERTIFICATE HAS BEEN AMENDED TO REFLECT YOUR REQUEST FOR A TRANSFER OF OWNERSHIP.

IT IS NOW YOUR RESPONSIBILITY TO OPERATE THIS EQUIPMENT IN ACCORDANCE WITH THE CONDITIONS OF THE APPROVED PERMIT AND CERTIFICATE AS PER N.J.A.C. 7:27-8.3(E).

IN ACCORDANCE WITH NoJoAoco 7:27-803(D), THIS PERMIT AND CERTIFICATE MUST BE READILY AVAILABLE FOR INSPECTION ON THE OPERATING PREMISES.

Paus born dust collere

N.J. Department of Environmental Protection Division of Environmental Quality CN-027, 401 East State Street Trenton, New Jersey 08625

Approved by:

05/21/88-63

Form VEM-017

NEW JERSEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

All Correspondence must indicate your APC PLANT ID I	VUMBER : 2
Certificate Number 061456	APC PLANT ID 00259
(Mailing Address)	(Plant Location)
DUBOIS CHEMICALS, INC 1100 DUBOIS TOWER CINCINNATI OH 45202	DUBOIS CHEMICALS, INC. UNION AVE & DU BOIS ST. EAST RUTHERFORD
Applicant's Designation of Equipment #5 BOILER STACK N.J. Stack No. 044 No. of Stacks 001 Approval 06/08/82 Effective 06/08/8	No. of Sources 01 Expiration 06/08/92
CERTIFICATE TO OPERATE CONTROL APPARATUS/E	QUIPMENT (EXPIRATION NOTICE)
TO RENEW THIS CERTIFICATE, REFER TO THE OTH CRIPTIONS TO DETERMINE THE CATEGORY OF EQUI ICATE. IF BOTH CATEGORIES ARE COVERED, THE THE APPROPRIATE BOX AND SUBMIT THE YELLOW CONTROL THE ENCLOSED PAYMENT CARD AND FEE (CER PAYABLE TO TREASURER, STATE OF NEW JERSEY, PIRATION. HAIL TO: N.J.D.E.PBUREAU OF CN 402, TRENTON, NJ OF TREASURED OF THE TO A MAXIMUM OF \$10,000(1ST OFFEE TO A MAXIMUM OF \$10,000(1ST OFFEE TO A MAXIMUM OF \$25,000(2ND OFFENSE) AND TO A MAXIMUM OF \$50,000(3RD & SUBSEQUENT OF N.J.A.C. 7:27-8.10(A)6, YOUR CERTIFICATE MAY A FEE. PURSUANT TO N.J.A.C. 7:27A-3, YOUR CIVIL ADMINISTRATIVE PENALTIES IF YOU OPERATE PAY A FEE. PURSUANT TO N.J.A.C. 7:27A-3, YOUR CATE, MARK THE APPROPRIATE BOX AND RETURN TO DATED). KEEP THE WHITE COPY FOR YOUR RECORT	CATEGORY II FEE APPLIES. MARK OPY (SIGNED AND DATED) ALONG TIFIED CHECK OR MONEY ORDER) AT LEAST 90 DAYS BEFORE EX- REVENUE 8625 C. 7:27A-3.8 YOU MAY BE AS- IN AN AMOUNT EQUAL TO THE MSE), TWO TIMES THE UNPAID ID THREE TIMES THE UNPAID FEE FENSES). ALSO, PURSUANT TO AY BE REVOKED IF YOU FAIL TO DU MAY ALSO BE ASSESSED DAILY ATE THE EQUIPMENT BEYOND THE TO TERMINATE THIS CERTIFI- THE YELLOW COPY(SIGNED AND
CATCORY T CHITPMENT	\$500 FEE ENCLOSED
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Approved by:	narie Salamandra

NEW JERSEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

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Certificate Number

013456

APC PLANT ID 00259

(Mailing Address)

(Plant Location)

DUBOIS CHEMICALS, INC 1100 DUBOIS TOWER

CINCINNATI

OH 45202

DUBOIS CHEMICALS, INC.
UNION AVE & DU BOIS ST.
EAST RUTHERFORD

Applicant's Designation of Equipment N.J. Stack No. 032

Approval

11/18/74

TANK #4 FUEL OIL
No. of Stacks 001
Effective 11/18/79

No. of Sources 01 Expiration 11/18/94

* CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT *

⇒ FIVE YEAR RENEWAL ⇒

THIS RENEWED FIVE YEAR CERTIFICATE IS BEING ISSUED UNDER THE AUTHORITY OF CHAPTER 106, P.L. 1967 (N.J.S.A.26:2C-9.2). THE POSSESSION OF THIS DOCUMENT DOES NOT RELIEVE YOU FROM THE OBLIGATION OF COMPLYING WITH ALL PROVISIONS OF THE NEW JERSEY ADMINISTRATIVE CODE, TITLE 7, CHAPTER 27.

IN ACCORDANCE WITH N.J.S.A. 54:4-3.56 TO 3.58, YOU MAY BE ENTITLED TO AN EXEMPTION OF TAXATION IF YOUR EQUIPMENT IS TAXED AND IS CONSIDERED TO BE AN AIR POLLUTION CONTROL DEVICE. A TAX EXEMPTION APPLICATION MAY BE OBTAINED FROM THE BUREAU OF NEW SOURCE REVIEW. (SEE OTHER SIDE)

IF IT IS NECESSARY TO AMEND YOUR EMERGENCY STANDBY PLANS, PLEASE CONSULT WITH THE APPROPRIATE REGIONAL OFFICE. (SEE OTHER SIDE)

IN ACCORDANCE WITH N.J.A.C. 7:27-8.3(D), THIS CERTIFICATE MUST BE READILY AVAILABLE FOR INSPECTION ON THE OPERATING PREMISES.

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N.J. Department of Environmental Protection Division of Environmental Quality CN-027, 401 East State Street Trenton, New Jersey 08625

Approved by:

07/20/89-12

Form VEM-017

NEW JEASEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

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Certificate Number

030907

APC PLANT ID 00259

(Mailing Address) -

(Plant Location)

DUBOIS CHEMICALS, INC 1100 DUBOIS TOWER

CINCINNATI

OH 45202

DUBOIS CHEMICALS,INC.
UNION AVE & DU BOIS ST.
EAST RUTHERFORD

Applicant's Designation of Equipment TANK RT 112

No. of Stacks

No. of Stacks 001 Effective 08/19/77 No. of Sources 01
Expiration 08/19/92

N.J. Stack No. 027 Approval 08.

08/19/77

. FIVE YEAR RENEWAL ≎

THIS RENEWED FIVE YEAR CERTIFICATE IS BEING ISSUED UNDER THE AUTHORITY OF CHAPTER 166, P.L. 1967 (N.J.S.A.26:2C-9.2). THE POSSESSION OF THIS DOCUMENT DOES NOT RELIEVE YOU FROM THE OBLIGATION OF COMPLYING WITH ALL PROVISIONS OF THE NEW JERSEY ADMINISTRATIVE CODE, TITLE 7, CHAPTER 27.

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IN ACCORDANCE WITH NoJohoco 7:27-803(D), THIS PERMIT AND CERTIFICATE MUST BE READILY AVAILABLE FOR INSPECTION ON THE OPERATING PREMISES.

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N.J. Department of Environmental Protection Division of Environmental Quality CN-027, 401 East State Street Trenton, New Jersey 08625

Approved by:

RATHON 000607

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NEW JERSEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

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Certificate Number

013457

APC PLANT ID 00259

(Mailing Address)

(Plant Location)

DUBDIS CHEMICALS, INC 1100 DUBDIS TOWER

CINCINNATI

BH 45202

DUBUIS CHEMICALS, INC. UNION AVE & DU BOIS ST. EAST RUTHERFORD

Applicant's Designation of Equipment

N.J. Stack No. 041

TANK #RT-154 No. of Stacks 001

No. of Sources 01

Approval 04/08/74 Effective 11/18/79

Expiration 11/18/94

FIVE YEAR RENEWAL

THIS RENEWED FIVE YEAR CERTIFICATE IS BEING ISSUED UNDER THE AUTHORITY OF CHAPTER 106, P.L. 1967 (N.J.S.A.26:2C-9.2). THE POSSESSION OF THIS DOCUMENT DOES NOT RELIEVE YOU FROM THE OBLIGATION OF COMPLYING WITH ALL PROVISIONS OF THE NEW JERSEY ADMINISTRATIVE CODE, TITLE 7, CHAPTER 27.

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IN ACCORDANCE WITH No.J.A.C. 7:27-8-3(D), THIS CERTIFICATE MUST BE READILY AVAILABLE FOR INSPECTION ON THE OPERATING PREMISES.

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Dould Pit

N.J. Department of Environmental Protection Division of Environmental Quality CN-027, 401 East State Street Trenton, New Jersey 08625

Approved by: .

07/20/89-12

NEW JERSEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

Correspondence must indicate your APC PLANT ID NUMBER

Certificate Number

084985

APC PLANT ID 00259

(Mailing Address)

(Plant Location)

DUBOIS CHEMICALS, INC 1100 DUBOIS TOWER

CINCINNATI

45202 OH

DUBOIS CHEMICALS, INC. UNION AVE: & DU BOIS ST. EAST RUTHERFORD

Applicant's Designation of Equipment R-17 4RFR16
No. of Stacks 002

06/14/88

Approval

Effective 06/14/88

No. of Sources 01 Expiration 06/03/95

CERTIFICATE: TO OPERATE: CONTROL APPARATUS OR EQUIPMENT.

: .FIVE YEAR . .

THIS FIVE YEAR CERTIFICATE IS BEING ISSUED UNDER THE AUTHORITY OF CHAPTER 106, P.L. 1967 (N.J.S.A. 26:2C-9.2). THE POSSESSION OF THIS DOCUMENT DOES NOT RELIEVE YOU FROM THE OBLIGATION OF COMPLYING WITH ALL PROVISIONS OF THE NEW JERSEY ADMINISTRATIVE CODE, TITLE 7, CHAPTER 27.

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IN ACCORDANCE WITH N.J.A.C. 7:27-8.3(D), THIS CERTIFICATE MUST BE READILY AVAILABLE FOR INSPECTION ON THE OPERATING PREMISES.

N.I. Department of Environmental Protection. Division of Environmental Quality CN-027, 401 East State Street Trenton, New Jersey 08625

Approved by:

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MAY 2 5 1990

03/13/90-04

Angelo Gennici

HRO - BERGEN COUNTY HEALTH DEPARTMENT

NEW JERSEY STATE DEPARTMENT



OF ENVIRONMENTAL PROTECTION

DIVISION OF ENVIRONMENTAL QUALITY AIR POLLUTION CONTROL PROGRAM

All	Corresponden	ce must indicate	vour APC PL	ANT ID N	UMBER

Certificate Number

088941

APC PLANT ID 00259

(Mailing Address)

DUBOIS CHEMICALS, INC 1100 DUBOIS TOWER

CINCINNATI

DH 45202

(Plant Location)

DUBDIS CHEMICALS, INC. UNION AVE & DU BGIS ST. EAST RUTHERFORD

Applicant's Designation of Equipment RB-101 RB-102 RB-103 N.J. Stack No. 045

Approval

01/18/89

No. of Stacks 003 Effective 01/18/89 No. of Sources 19 Expiration 07/06/91

▼ TEMPORARY CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT

THIS TEMPORARY CERTIFICATE IS BEING EXTENDED TO ALLOW FOR FURTHER FIELD/OFFICE EVALUATION.

THIS EXTENSION SHALL NOT BE CONSTRUED TO EXTEND THE COMPLIANCE DATE(S) OF ANY ORDER ISSUED BY OR ENTERED INTO WITH THE DEPARTMENT AS THE RESULT OF AN ADMINISTRATIVE OR JUDICIAL ACTION.

IF THE DEPARTMENT IS SOLELY RESPONSIBLE FOR BEING UNABLE TO INSPECT THIS EQUIPMENT IN OPERATION AS PERMITTED DURING THIS 90-DAY PERIOD, THIS TEMPORARY CERTIFICATE WILL BE EXTENDED AUTOMATICALLY. HOWEVER, IF YOU ARE RESPONSIBLE FOR THE DEPARTMENT'S BEING UNABLE TO INSPECT, E.G., NOT NOTIFYING THE DEPARTMENT WHEN THIS EQUIPMENT OR PROCESS IS IN OPERATION, THIS CERTIFICATE MAY NOT BE EXTENDED AND YOU WILL BE NOTIFIED BY THE DEPARTMENT THAT YOU MUST APPLY FOR AND OBTAIN AN EXTENSION AUTHORIZING YOU TO CONTINUE TO OPERATE THE EQUIPMENT. THE DEPARTMENT RESERVES THE RIGHT TO WITHHOLD ANY EXTENSION OF THIS TEMPORARY CERTIFICATE, IN WHICH EVENT YOU WILL BE NOTIFIED THAT YOU MUST APPLY FOR AND OBTAIN AN EXTENSION AUTHORIZING YOU TO CONTINUE TO OPERATE AFTER THE EXPIRATION DATE OF THIS CERTIFICATE.

IN ACCORDANCE WITH NoJohoco 7:27-803(D) THIS CERTIFICATE MUST BE READILY AVAILABLE FOR INSPECTION ON THE OPERATING PREMISES.

PLEASE REFER TO YOUR INITIAL PERHIT APPROVAL FOR OPERATING **CONDITIONS**•

Roof blowers fu Kutles en ligued room Donald Pa

Approved by: .

Mississ Art



Notice of Authorization

PERMIT NO.

ISSUANCE DATE

EFFECTIVE DATE

EXPIRATION DATE

90-4819-4L

2/6/91

2/6/91

2/5/93

ISSUED TO

DuBois Chemicals, Inc.

FOR ACTIVITY/FACILITY AT

Union Avenue and DuBois Street East Rutherford, NJ

07073

OWNER

DuBois Chemicals, Inc. 1100 DuBois Tower 511 Walnut Street Cincinnati, Ohio 45202

ISSUING DIVISION

Water Resources

TYPE OF PERMIT

Treatment Works Approval Construct and Operate

STATUTE(S)

APPLICATION NO.

N.J.S.A.

58:10A-1 et seq.

A PERMIT TO

Construct and operate the treatment works for the treatment of process wastewater and stormwater which consists of four 15,000 gallon batch neutralization tanks, one 9,000 gallon sludge holding tank, one sludge filter press, one 100,000 gallon equalization tank and associated system equipment at the location specified above as proposed in the treatment works approval application dated September 14, 1990 and subsequent submittal dated October 22, 1990 as further specified in documents referenced on Page 1 of the Permit to Construct and Operate Treatment Works (Form WQM-004) bearing the Permit Number and Issuance Date indicated above.

DEP-008 (1/88) Narinder K. Ahuja, P.E., Bureau Chief THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.

New Jersey Department of Environmental Protection



State of New Jersey DEPARTMENT OF ENVIRONMENTAL PROTECTION **DIVISION OF WATER RESOURCES**

CN 029 Trenton, NJ. 08625-0029 Mostrent Wars Aprimal

(609) 292-1637 Fax # (609) 984-7938

Office of the Director

> Angelo A. Pennisi DuBois Chemicals, Inc. Union Avenue at Dubois Street East Rutherford, N.J. 07073

CERTIFIED MAIL RETURN RECEIPT REQUESTED SEP 1 1 1990

RE: Treatment Works Application No. 90-4473-4N DuBois Chemicals/East Rutherford, Bergen County NJPDES/DSW Permit No. NJ0035769

Dear Mr. Pennisi:

Enclosed is a Treatment Works Approval (TWA) Construction and Operation permit issued pursuant to Title 58 of the Revised Statutes of the State of New Jersey and in consideration of your TWA application dated April 2, 1990, certified by Russell K. Johnson, P.E. of Killam Associates, 27 Bleeker Street, Millburn, Essex county.

This permit is for Construction and Operation of the proposed shopfabricated oil/water separator for the treatment of storm water prior to discharge to Berrys Creek, via storm sewer.

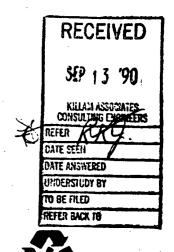
If you have any questions regarding this permit, please contact Eric Sussman of my staff at (609) 292-4860.

Sincerely, William D. Boekle

William F. Boehle, P.E., Chief Surface Water Section Bureau of Industrial Discharge Permits

WFM 359:es

Enclosure c: TWA Permit Distribution List





Notice of Authorization

ERMIT NO. 0-4473-4N

ISSUANCE DATE 9/11/90

EFFECTIVE DATE 9/11/90

EXPIRATION DATE 9/10/92

SUED TO uBois Chemicals, Inc. 100 DuBois Tower 11 Walnut Street incinnati, Ohio, 45202

FOR ACTIVITY/FACILITY AT OWNER DuBois Chemicals, Inc. Union Ave. at DuBois St. E. Rutherford, N.J. 07073

DuBois Chemicals, Inc. 1100 DuBois Tower 511 Walnut Street Cincinnati, Ohio, 45202

SUING DIVISION ater Resources

AMIT TO

TYPE OF PERMIT Treatment Works Approval Construct and Operate

STATUTE(S) APPLICATION NO. N.J.S.A. 58:10A-1 et seq.

onstruct and operate the treatment works as proposed in the Treatment orks Approval (TWA) application, dated April 2, 1990. The proposed reatment works consists of a shop-fabricated, Slant Rib Coalescing (SRC) il/Water separator (model number SRC-100). The rated capacity of the

reatment works is 100 gpm. The influent consists of approximately 2,500 gpd) of storm water runoff from the facility's parking lots and hiping/receiving areas. The discharge will be to the Berrys Creek, via t m sewer, classified as FW2-NT, under the terms and conditions of

JPDES/DSW permit NJ0035769.

DEP AUTHORIZATION

P-005

Narinder Ahuja, P.E., Bureau Chief THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.

New Jersey Department of Environmental Protection



State of New Jersey DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WATER RESOURCES

CN 029 Trenton, N.J. 08625-0029

(609) 292-1637 Fax # (609) 984-7938

April 4, 1990

DuBois Chemicals Union Avenue & DuBois St. East Rutherford, N. J. 07073

ATTN: Thomas Gonnella, Safty Director

RE: Original Physical Connection Permit # 857

Dear Mr. Gonnella:

Eric J. Evenson

Acting Director

We have pleasure in enclosing herewith an Original Physical Connection Permit which is being issued by this Department in accordance with the provisions of N.J.S.A. 58:12A-1 et seq., N.J.S.A. 58:11-9.1 et seq., and N.J.A.C. 7:10-10.1 et seq.

Your attention is particularly drawn to the expiration date and to the conditions with which you must comply before the next renewal can be affected. In connection with this, we suggest that you make immediate arrangements with the local health and/or water authorities for the required witnessing of the four quarterly pressure tests to be conducted each quarter between April 1 and March 31, and, if required, an internal inspection conducted within six months of the next application for renewal.

To facilitate your recording the results of these tests and inspection, we are also enclosing two copies of the renewal application. Upon completion of the last test during the first quarter 1991 and certification by your local authorities, this form and a check made payable to Treasurer State of New Jersey in the amount of \$200.00 should be forwarded to this Bureau before MARCH 31, 1991. Should you have any questions, you may call me at (609) 292-5550.

sincerely,

James R. Montgomery

James & Monda

Physical Connection Program Bureau of Safe Drinking Water

JRM: PC2 Enclosures

CC: Hackensack Water Company North Arlington Hlth Dept

New Jersey is an Equal Opportunity Employer

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION CN 402 Trenton, N.J. 08625





				<u>. </u>			
The New Jersey Department accompanying same applica and stipulations enumerated	tion, and ap	plicable laws and re-	gulations. This perm	uit is also su	biect to the fu	uther conditions	
Permit No.	Issuance Da		Effective Date		Expiration Dat		
857	April	4, 1990	April 1,	1991	1 •	31, 1992	
Name and Address of Applicant		Location of Activity/Facility		Name an	Name and Address of Owner		
DuBois Chemical Union Avenue & I East Rutherford	DuBois St		Avenue & DuBo	is Stree	Same as Ap	plicant	
Issuing Division WATER RESOURCES		Type of Permit RENEWAL F PHYSICAL	ERMIT : CONNECTION	Statute() N.J. 10.1) C. 7:10- et seq.	Application No.	
This permit grants permission	on to:						

Maintain, own or operate a Physical Connection between an approved Public Community Water Supply and an unapproved water supply at the above named location, in consideration of the renewal application received March 6, 1991.

Number, Type(s) and size(s) of Devices installed - Two 2 inch RPBPs

Owner of Approved Public Water Supply - Hackensack Water Company

Source of Unapproved Water Supply - Private Well

This Permit is Subject to the Following Specific Conditions:

1. The approved physical connection(s) is (are) tested for tightness under prevailing pressure conditions at least every three months. (N.J.A.C. 7:10-10.6(a)1.)

2. The approved physical connection(s) is (are) subjected to an internal inspection, if required, within six months prior to the application for

renewal of the permit. (N.J.A.C. 7:10-10.6(a)2.)

3. The owner of the approved physical connection(s) shall arrange for the witnessing of these quarterly pressure tests and annual internal inspections with the owners of the Public Community Water Supply and/or the Local Board of Health. Such tests, conducted solely by a representative or employee of the owner of the approved physical connection(s), are not acceptable. (N.J.A.C. 7:10-10.6(b))

4. The Local Board of Health and the owner of the Public Community Water Supply which are affected certify that the approved physical connection(s) is (are) funtioning properly. (N.J.A.C. 7:10-10.5(b)3)

cc: Hackensack Water Company North Arlington Hlth Dept

Approved by the Department of Environmental Protection

APR 30 1991

Hamill, Chief

Bureau of Safe Drinking Water

^{*} The word permit means "approval, certification, registration, etc."

Attachment B

Response of Rathon Corp to the USEPA Request for Information Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq. re: The Berry's Creek Study Area, Bergen County New Jersey

Hazardous Substances Lists (see question 11 above)

Hazardous Substance and Waste Inventory, Attachment 7 to the ECRA Case No. 91157 Site Evaluation Submission (October 14, 1991). See question 11 above.

Tables 1 (Raw Material Tank Storage - 1987), 2 (Hazardous Substance Inventory), and 3 (SARA Title III/OSHA-Haz/Com Raw Material List), Preliminary Environmental Assessment of DuBois Chemicals' New Jersey Facility, by Woodward-Clyde Consultants (Sept. 1987).

ATTACHMENT 7 (Continued) DIVERSEY CORP. UNION AVENUE AND DUBOIS STREET EAST RUTHERFORD, N.J.

HAZARDOUS SUBSTANCE AND WASTE INVENTORY

EER LAL NAME	CURRENT QUANTITY	LOCATION REFERENCE (1)	CONTAINER TYPE/SIZE (2)	TYPICAL ANNUAL USAGE (LBS)	TO REMAIN ON SITE (YES OR NO)
ಚುಣ್ವಾ S-95 (2% Benzene)	Various	Various		Various	Yes
ਮਰਮੁਕz AN 148 (2% Benzene)	Various	Various.		Various	Yes
-50 (<5% Hydrochloric Acid)	Various	Various		Various	Yes
earfac AA 270 (15% Phosphoric Acid)	Various	Various	r	Various	Yes
hos TS 230 (2% Phosphoric Acid)	Various	Various		Various	Yes
-30 (<4% Sodium Hydroxide)	Various	Various		Various	Yes
ois 90 LAS (90% Sodium	Various	Various ,		Various	Yes
odecylbenzene Sulfonate)	Various	Various		Various	Yes
tech 20-113	Various	Various	•	Various	Yes
1% Sodium Hydroxide)		•			
hos TS-811 (15% Phosphoric Acid)	Various	Various		Various	Yes
ac RE-610 (5% Phosphoric Acid)	Various	Various		Various	Yes
bopol 941 (0.3% Benzene)	Various	Various		Various	Yes
ois 97 LAS (97% Dodecylbenzene	Various	Various		Various	Yes
ulfonic Acid)	•				

Material is stored within the facility. Depending on the status of the material, the material may be stored in the receiving warehouse or shipping warehouse. Storage areas are depicted on site plan.

Material is stored in various containers. The containing units include various sizes of plastic containers, 55 gal. drums, 300 gal. totes, etc.

ATTACHMENT 7 (Continued) DIVERSEY CORP. UNION AVENUE AND DUBOIS STREET EAST RUTHERFORD, N.J.

HAZARDOUS SUBSTANCE AND WASTE INVENTORY

"ERIAL NAME	CURRENT QUANTITY	LOCATION REFERENCE (1)	CONTAINER TYPE/SIZE (2)	TYPICAL ANNUAL USAGE (LBS)	TO REMAIN ON SITE (YES OR NO)
wic Chloride 45.5 Be	Various			Various	Yes
ric Sulfate	Various			Various	Yes
ıminum Sulfate	Various	•		Various	Yes
c Sulfate	Various	•		Various	Yes
ric Sulfate, Tech 50%	Various	,	•	Various	Yes
onium Hydroxide-26 Be	Various			Various	Yes
ric Sulfate, Tech 50%	Various		•	Various	Yes
uid Ferri-Floc	Various			Various	Yes
ium Nitrite - Flake	Various	,		Various	Yes
per Nitrate	Various		•	Various	Yes
iam Tripolyphosphate - Phase 1	Various			Various	Yes
odium Phosphate	Various			Various	Yes
sødium Phosphate - Crystal	Various			Various	Yes
sodium Phosphate Anhyd.	Various			Various	Yes
ol SN (0.15% Formaldehyde)	Various			Various	Yes
ium Hydroxide, Flake	Various		•	Various .	Yes
assium Hydroxide, Flake	Various		, '	Various	Yes
ohib 28 (6% Formaldehyde)	Various			Various	Yes
ratec TT-50-S	Various			Various	Yes
∍0% Sodium Tolytriazole)					
lant (2% Formaldehyde)	Various		•	Various	Yes
cide A (2% Sodium Hydroxide)	Various		•	Various	Yes
CRYL R-747	Various		·	Various	Yes
5% Ammonium Hydroxide)			. •		

Material is stored within facility. Depending on the status of the material, the material may be stored in the receiving warehouse or in shipping warehouse. Storage areas are depicted on site plan.

Material is stored various sizes of containers. The containing units include various sizes of plastic containers, 55 gal. drums, 300 gal. totes, etc.

ATTACHMENT 7 DIVERSEY CORP. UNION AVENUE AND DUBOIS STREET EAST RUTHERFORD, N.J.

HAZARDOUS SUBSTANCE AND WASTE INVENTORY

					•
	CURRENT	LOCATION	CONTAINER	TYPICAL ANNUAL	TO REMAIN ON SITE
ER (AL NAME	QUANTITY	REFERENCE(1)	TYPE/SIZE(2)	USAGE (LBS)	(YES OR NO)
ium Hydroxide, Liquid 50%	Various			Various	Yes
assium Hydroxide, Liquid 47%	Various		•	Various	Yes
PENE 100S (2% Sodium Hydroxide)	Various		•	Various	Yes
ethanolamine	Various		•	Various	Yes
sel Fuel Oil	12,000 gal	Rt 115 (3)	AST/3,200 gal.	800 (4)	No
ium Tripoly Phos. X-75	Various	KC 115 (5)	AD173,200 gai.	Various	Yes
ium Tripolyphosphate - STPP	Various			Various	Yes
imm hydroxide, Beads	Various	•		Various	Yes
1 Cil	Unknown	Rt 153 (3)	AST/15,000 gal.		No
is 97 LAS (97% Dodecylbenzene	30,000 lbs	Rt 155 (3)	-		. ,
ulfonic Acid)	30,000 105	KC 155 (5)	AST/8,225 gal.	263,000 lbs (4)	Yes
A-40 (2% Sodium Hydroxide)	Various			Various	Yes
ium Hypochlorite 15% (Bleach)	Various	•		Various	Yes
sphoric Acid - 75%	54,182 lbs	Rt 161 (3)	AST/6,660 gal.	54,182 lbs (4)	Yes
estos	Unknown	N/A	N/A	N/A	Yes
cic Acid	Various			Various	Yes
nic Acid 90%	Various			Various	Yes
tatic Acid 20 Be	Various			Various	Yes
cic Acid 42 Be	Various			Various	Yes
furic Acid 66 Be	Various	•		Various	
nium Bifluoride	Various			Various	Yes
um Bisulfite	Various		•		Yes
ic Chloride 42 Be				Various	Yes
ic chioride 42 be	Various		,	Various.	Yes

With the exception of specified above ground storage tanks (AST), material is stored within the facility. Depending on the status of the material, the material may be stored in the receiving or shipping warehouse. Storage areas are depicted on site plan.

with the exception of specified above ground storage tanks (AST), material is stored in various sizes of containers. The containing units include various sizes of plastic containers, 55 gal. drums, 300 gal. totes, etc.

Refer to site plan.

To be removed off site in future.

Fuel oil to be consumed over upcoming heating season. Additional fuel oil will not be purchased.

TABLE I EAST RUTHERFORD RAW MATERIAL TANK STORAGE - 1987

LIQUIDS

Tank		Nominal Capacit	:y	
No.	Raw Material	(Gallons)	Construction	Heated
RT-101	Liquid Caustic Soda	12,000	Stainless Steel	Yes
RT-102	Tall Oil Fatty Acid Low	12,000	Stainless Steel	Yes
RT-103	PSK-20	12,000	Stainless Steel	Yes
RT-104	Caustic Potash	12,000	Black Iron	Yes
RT-105	Triethanolamine	2,500 .	Stainless Steel	Yes
RT-106	DuBois 844	5,000	Stainless Steel	Yes
RT-107	Sulfonic LS-17	2,500	Stainless Steel	Yes
RT-108	Sodium Silicate Liquid E	5,000	Black Iron	Yes
RT-109	Triethanolamine	2,500	Stainless Steel	Yes
RT-110	Sodium Gluconeptenate	5,000	Black Iron	Yes
RT-111	Odorless Mineral Spirits	2,000	Stainless Steel	No
RT-112	Methylene Chloride	5,000	Black Iron	No
RT-113	Butyl Cellosolve	2,000	Black Iron	No
RT-114	Empty	2,500	Stainless Steel	Yes
RT-115	Diesel Oil	3,000	Black Iron	No
RT-116	TKPP	2,000	Lined	Yes
RT-153	Kerosene	15,000	Black Iron	No
RT-154	No. 4 Fuel Oil	15,000	Black Iron	No
RT-155	DDBSA	8,000	Fiberglass	Yes
RT-156	EDTA-40	8,000	Fiberglass	Yes
RT-157	Sodium Hypochlorite	5,000	Fiberglass	Chilled
RT-161	Phosphoric Acid	8,000	Fiberglass	Yes
RT-162	DuBois 808	8,000	Fiberglass	Yes

POWDERS

Tank		Nominal Capacity	
No.	Raw Material	(Volume Ft ³)	Construction
RT-131	STPP	1,200	Black Iron
RT-132	Sodium Metasilicate (Penta)	1,200	Black Iron
RT-133	Sodium Sulfate	1,200	Black Iron
RT-134	Soda Ash Light	1,200	Black Iron
RT-135	Empty	4,215	Black Iron
RT-136	Caustic Soda	1,800	Black Iron

ABLE 2

HAZARDOUS SUBSTANCE INVENTORY

Material		
	Quantity (Lbs) Location	Storage Method
Chromic Acid, Ground	2,062 Warehouse & Mezzanine	Cans
Acetic Acid (Glacial) Tech.	695 Warehouse	
Formic Acid, 90%	8,410 Warehouse	Drums
Muriatic Acid - 20 BE	11,147 Warehouse & Yard	Drums
Nitric Acid - 42 BE	3,400 Warehouse	Tuff Tanks
Phosphoric Acid - 75%	•	Carboys
Sulfuric Acid-66 BE	65,850 Tank Farm	Tank RT-161
Ammonium Bifluoride	9,426 Warehouse	Tuff Tanks
	544 Warehouse	Bags
Sodium Hisulfite	11,437 Warehouse	Bags
Ferric Chloride	15,840 Yard	Carboys
Ferric Sulfate	6,060 Warehouse	Bags
Nickel Nitrate	375 Warehouse	
Aluminum Sulfate (Iron Free)	5,000 Warehouse	Fiber Drum
Zinc Sulfate	55,203 Warehouse	Rags
Ammonium Hydroxide - 26	•	Bags
Disodium Phosphate	2,573 Warehouse	Drums
Sodium Hypochlorite 15%	2,900 Warehouse	Bags
Potassium Permanganate	33,969 First Floor	Tank RT-157
Sodium Dichromate	40 Warehouse	Metal Pail
•	600 Warehouse	Bags
Sodium Chromate, Anhydrous	252 Warehouse	Pags
Sodium Nitrite - Flake	11,986 Warehouse	Bags
Copper Nitrate	195 Warehouse	Fiber Drum
Trisodium Phosphate - Chlor.	23,755 Warehouse	
Trisodium Phosphate Crystal	10,152 Warehouse	Bags
Fairit Booth Fremix		Bags

Caustic Soda Beads	113,606 Yard	Silo RT-136
Caustic Soda - Flake	2,400 Warehouse	Drums
Caustic Potash - Flake	800 Warehouse	Drums
Caustic Potash - Liquid	37,700 Tank Farm	Tank RT-104
Caustic Soda, Liquid 50%	36,956 Tank Farm	Tank &T~101
Othodichlorobenzene	3,000 Warehouse	Drums
Pyrocide Intermediate #5192	181 Warehouse	Drums
Pyrenone 30-3-SC	276 Warehouse	Drums
Odorless Insecticide Base H	23,886 Warehouse	Drums
Odorless Mineral Spirits	14,057 Warehouse & Tank	Farm Drums & Tank RT-111
100 Second Oil	23,744 Warehouse	Drums
Fuel Oil #1 (kerosene)	20,763 Tank Farm	Tank RT-154
Tectyl TL-282	786 Warehouse	Drums
LEP Solvent	4,837 Warehouse	Drums
SAE Dil 30	10,479 Warehouse	Drums
Technical White Mineral Dil	12,121 Warehouse	. Drums
Solvent 140F	1,083 Warehouse	Drums
Solvent SC 150	2,076 Warehouse	Drums
Solvent 220	2,955 Warehouse	Drums
Cresylic Acid D40	6,511 Warehouse	Drums
Phenol 100 USP	831 Warehouse	Drums
Santobrite Pellets	2,800 Warehouse	Fiber Drums & Cases
Di Octyl Phthalate (DOP)	300 Warehouse	Drums
Dibutyl Fhthalate	233 Warehouse	Drums
EDTA 40	40,522 Tank Farm	Tank RT-156

EDTA 31	3,059 Warehouse	Fiber Drums
Petro AG Special	255 Warehouse	Bags
Chlorothene	5,661 Warehouse	Drums
Toluol	1,480 Warehouse	Drums
Richonate YLA	1,800 Warehouse	Drums
DuBois 85 LAS	4,710 Warehouse	Cartons
DuBois 97 LAS	17,765 Tank Farm	Tank RT-155
UDET 950°	5,030 Warehouse	Bags
Petro 22 Powder	985 Warehouse	Bags
Petro BA	3,106 Warehouse	Bags
Actidip	100 Warehouse	Fiber Drums
Copper Napthenate 8%	900 Warehouse	Drums
Zinc Oxide	8,693 Warehouse	Hag s
Zinc Stearate Disp	7,405 Warehouse	Fiber Drums
Diesel Oil	12,000 Yard & SE Corner of Bldg.	Tank RT-115
#4 Fuel Oil	6,239 Yard @ SE Corner of Bldg.	Tank RT-153
Nopco 1419A Pyrenone Dursban	380 Warehouse	Drums
Lubrizol 5907	242 Warehouse	Drums
Hybase M400	94 Warehouse	Drums
Petro BAF	2,040 Warehouse	Drums
	1,373 Warehouse	Rags

---- / WAM - MAZ/OOM RAW MATERIAL LIST

8000	, , , , , , , , , , , , , , , , , , , ,		P. 12
0020		2360	METHYLENE CHLORIDE
0030	ACETIC ACID, GLACIAL	2410	O-DICHLOROBENZENE
0060	FORMIC ACID 90%	2450	PERCHLOROETHYLENE
0110	HYDROFILIORIC ACTD	2100	PERCHLOROETHYLENE
0150	HYDROCHTORIC ACTS	2500	CALCIUM CARBONATE
0170	NITHE ACTS	9.00	
0180	OXALIC ACID	3490	
0200	PHOSPHORIC ACID	3498	PYRENONE 30-3-SC
0240	SULFURIC ACID		•
0270	SOLPURIC ACID	4017	
0270	AMMONIUM BIFLUORIDE	4060	PROPARGYL ALCOHOL
0200	SOUTH BISHFITE	4760	ODORLESS INSECTICION R
0310	TRON CHILDRIDE	4770	MINERAL SPIRITS-COOPLE
0311	PERRIC CHORIDE	4830	11 FUEL OIL
0320	FERRIC SULFATE	4890	KWIK DRI 66
0370	SODIUM BISULFITE IRON CHLORIDE FERRIC CHLORIDE FERRIC SULFATE ALUMINUM PHOSPHATE NICKEL NUTBATE	4960	\$2 FUEL OIL
0430	ALLM (DRY)	5100	140 SOLVENT
0530	AMMONIUM DIMOLYBDATTE		150 SOLVENT
0550	AMMONIUM HYDROXIDE BORAX 5-MOL	5210	SOLVENT 220 A
0570	BORAX 5-MOL	5280	SOTATIVE SSO W
0580	BORAX 10-MOL	5230	CRESTILIC ACID
0590	MAGNESIUM OXIDE	5410	CRESYLIC ACID O-CRESOL PHENOL
0760	CALCIUM OXIDE SODIUM HYPOCHLORITE	2410	PHENCE PENTACHLOROPHENOL SANTORRITE DELLETS
0880	CODIN DODGE COME	3425	PENIACHLOROPHENOL
0890	POTASSIM PERMANGANATE		
0070	FOLKSTUM PERMANGANATE	5580	DI-N-OCTYL
1010	600734 275000	5610	DIBUTYL PHTHALATE
	SODIUM DICHROMATE		
1220	SODIUM CHROMATE	6280	
		6310	
1230		6790	CELLOSOLVE
1231	SODIUM NITRITE LIQUID	6810	CYCLOHEXANDI.
1240	SODIUM NITRITE PELLETS	6870	2-BUTTOXYETTYANTE
1340	SODIUM SILICOFT INDITIO	6880	DIMETHYLFORMANIDE
1420	TELIVIPOLASSIUM PYROPHISPHATE	6900	ETHYLENE GLYCOL
1440	TETRASODIUM PYROPHOSPHATE	6970	FURFURYL ALCOHOL
1480	TRISODIUM PHOSPHATE-CR	6990	HEATENE CTAOL
1490	TRISODIUM PHOSPHATE-AN	0,,,	marke descen
1540	DIGLYCOLAMINE	7010	ISOPROPANDL
1590	HYDRAZINE SOL.	7030	METHANOL
1631	CYCLOHEGYLAMINE	7070	· · · · · · · · · · · · · · · · · · ·
1650	MONDETHANDLAMINE	7120	METHYL ETHYL KETONE
1660	DI ISOPROPANCIAMINE		GLYCOL ETHER
1770	DIETHYLETHANOLAMINE	7200	3440 SCLVENT
1710	MORPHOLINE	7220	TOLUENE
	DIETHANDLAMINE	0010	
1968	STIME COLOR	8010	DUBOIS 97 LAS
	ALUMINUM CHIPS		
2000	CODTINA INDOCUMENT	9730	COOPER NAPTHENATE
2030	SODIUM HYDROXIDE, ANH	9810	FORMALDEHYDE
	CAUSTIC POTASH-ANH.	9865	TITANIUM DIOXIDE
	CAUSTIC POTASH-LIQ.	9980	ZINC OXIDE
2200	CAUSTIC SODA-LIO.	9991	ZINC STEARATE
2201	CAUSTIC SODA-BUILK	_	

Attachment C

Response of Rathon Corp to the USEPA Request for Information Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq. re: The Berry's Creek Study Area, Bergen County New Jersey

Material Safety Data Sheets (see Question 18 above)

DBC 9985 8/4/83

Superseding 11/21/80

9 ECOIN - 32692

CAS - 104-55-2

DOT - None

Change - Add ECOIN #

SINBACTAL

PHYSICAL AND CHEMICAL PROPERTIES:

disc se cinnamic ald.

Purity

98% Minimum

Specific Gravity @ 25/25°C

1.047 - 1.051

Refractive Index @ 20°C

1.6200 - 1.6230

Halogens

Free

Solubility

Clearly soluble in 6 parts of 60% alcohol; 2 parts of 70% alcohol.

Flash Point (TCC)

268°F

CONTROLS:

Clear light yellow liquid with a strong cinnamon odor.

Specific Gravity @ 25/25°C

1.047 - 1.051

B 003

Refractive Index @ 20°C

1.6200 - 1.6230

B 007

SOURCE:

Sperti Drug Products, Inc. Erlanger, Kentucky 41018

MM/kb

DBC 8080 11/11/87

Superseding - 8/2/83

ECOIN - 120605 CAS - 126-92-1

DOT - None

Change - Update Suppliers

DuBOIS 808

(Sodium salt of 2-ethyl hexyl sulfate)

PHYSICAL & CHEMICAL PROPERTIES:

Surface Tension, 25°C, 0.1% by volume in distilled water
Active, %
Specific Gravity 20/20°C
Appearance
Odor

62 dynes/cam
38 - 40
1.112
Clear straw colored liquid
Fruit-like

CONTROLS:

Appearance	ce	
Specific	Gravity	
	(Mol. Wt.	232)
рН		

Clear straw colored liquid 1.104 - 1.120 B 003 38% minimum C 022 8.0 - 10.5

SOURCE:

- 1. Alcolac, Inc. (Sipex BOS)
- 2. Niacet Corporation (Niaproof Anionic Surfactant 08)
- 3. Witco Chemical Company (Witcolate D-510)
- 4. Henkel Corporation (Sulfotex OA)

LC/cs

	5/7/85
Superseding CAS	7/15/83 69013-18-9
DOT	None
CHANGE	Controls

DBC 7537

SURFONIC LF-17

A modified linear aliphatic poly ether

PHYSICAL & CHEMICAL PROPERTIES:

Wetting times:	Skein	(25°C,	1.5G hook)	0.05% 0.25% 0.10%	7.2 21.1 40.6	sec
	Tape	(25°C),	1.5G hook)	0.10%	_	sec
Surface Tension 25	°C: 0.1%		33.0 dynes 38.0 dynes			
Interfacial Tensio			4.4 dynes	/cm.		
Cloud Point, 1% aq Specific Gravity, Freezing Point ° Flash Point (PMCC) pH - 1% Solution (Neutralization Num Color (APHA) Ross-Miles Foam (1	20/20°C C , °F DI water) ber to pH 20°F, 1%	7.0	32.38 1.003 -2 295 5.0 - 8.0 0.5 max 200 max. 6.0 inital			·
Viscosity, CST, 10	00°F 0°F	•	54.5 10.5		,	

CONTROLS:

Clear to slighy hazy pale yellow liquid

Cloud Point (1% Aqueous)	35.0 <u>+</u> 3° C	В 006
Specific Gravity, 20° C pH - 1% solution (DI Water) SOURCE:	$\begin{array}{c} 1.003 \pm 0.010 \\ 5.0 - \overline{8.0} \end{array}$	B 003 B 014

Texaco (Jefferson Chemicals) GAF (Antarox BL-236)

DBC 7240 2/25/88 Superseding 2/4/85 CAS - 9038-95-3 DOT - None Change in - Source Deletion

UCON 50-HB-5100

A polyalkylene glycol

PHYSICAL & CHEMICAL PROPERTIES:

Specific Gravity @ 20°/20°C	1.063
Viscosity, SUS 100°F	5100
Flash Point (COC), °F	450
Pour Point, °F	-20
pH - 10% aqueous solution	6.5
@ 25°C	
% water. Wt., maximum	0.3

CONTROLS:

Viscosity at 100°F., SUS

4700 - 5500

K 002

Appearance

Clear, free of suspended matter

SOURCE:

- 1. Union Carbide Ucon 50-HB-5100
- 2. Jefferson Chemical WL 5000 L
- 3. Olin WS 5100
- 4. Mazer Macol 5100

DBC 2870
7/19/85
Superseding 5/17/83 (Metanil ECOIN - 303934 Yellow Dy CAS - 587-98-4
DOT - None
Change - Name & Source

@ Acid Yellow #36

Metanil Yellow Dye

Physical and Chemical Properties:

Sodium salt of m (p-anilinophenylazo) benzene
Sulfonic acid
Color Index Number 13065
Hilton Davis Number 204401
Type Acid Yellow # 36

Control Test:

Make a laboratory sample of FLOW or SUDS. Color must be comparable to a standard.

Source:

BASF Wyandotte Corporation (Basacid Yellow 232) Pigments 491 Columbia Avenue Holland, Michigan 49423 Telephone: 616-392-2391

Atlantic Industries, Inc. (Metanil Yellow Concentrate)
P.O. Box 216
Nutley, New Jersey 07110
Telephone: 201-235-1800

Ciba-Geigy Corporation (Pergacid Orange 5G)
Dyestuffs & Chemicals Division
P.O. Box 18300
Greensboro, N.C. 27419
Telephone: 919-292-7100

DBC 2900 5/17/83 Superseding 9/13/78 © ECOIN - 150383 CAS - 1934-21-0 DOT - None Change - Add ECOIN #

FD&C Yellow # 5 DYE

Physical and Chemical Properties:

Type

Tartrazine

Formula

Trisodium salt of 3-carboxy-5-hydroxy-1-p-sulfopheny1-4-p-sulfophenylazo-pyrazole

Color Index F.D. & C

19140 approved

Control:

Make up a laboratory batch of DRI IT Color must be comparable to standard

Source:

Hilton Davis Division of Sterling Drug Cincinnati, Ohio

H. Kohnstamm & Co., Inc.
Keystone Ingham

DBC 2840 5/17/83

68% Pure Dye

Acid Blue #9

and/or pastes.

42090

@ ECOIN - 155109 CAS - 2650-18-2 DOT - None

Superseding 9/13/78

Change - Add ECOIN #

Disodium salt of 4-{[4-(N-ethyl-]

Powder - See Note* for liquids

sulfobenzylamine) phenyl] (2-sulfoniumphenyl) methylene [1-(N-ethyl-N-p-sulfobenzyl)-△ 2,5-cyclohexadienimine

HIDACID AZURE BLUE

PHYSICAL AND CHEMICAL PROPERTIES:

Dye Content Color Index Number Color Index Classification Structure

Appearance

CONTROLS:

Make up in DuPAN Premix Should give standard color in DuPAN

*Note - If these products are used, adjust formulas by multiplying dye requirement by these factors:

2.00 50% Liquid 1.67 60% Liquids 1.54 65% Paste

SOURCE:

Hilton Davis, Cincinnati, Ohio Hidacid Azure Blue #20-2204 *Hidacid Azure Blue Paste 65% #20-2287 *Hidacid Azure Blue Liquid 50% #20-2342 GAF *Neptune Blue WF Liquid 60% (JRM-614)

Keystone - Ingham

DuE	301S)			MAKE	5	LEEI	<u> </u>	PAGE	1		
		ISSUE DATE	07/28/89	1	BRI-	SURE					
WHERE THE ACCI	ENT IS ON QUALITY	EFFECTIVE (DATE	PRODUCT TO	PE		v nerence	NT .			
/ TAKE DATE	02824-A	SUPERSEDE	07/28/89 s	<u> </u>	QUIU	LAUNUR	Y DETERGE REASON FO	R CHANGE	<u></u>		
			02824-A DTD.	4/17/89			CHANGE	REWORK		·	
NO.		1			BATC		004	3536yal	-		•
HECK YES	S NO	BATO			DOUCED		KETTLE-MIXER	OPERATOR	SUPERVISO	OR OK	CTO.DRUM
ONE			CRIBED EYE PROTEC		21.00/5	S IN ADDI	TION TO AN	Y OTHER SAFE	TY EQUIP	MENT SP	ECIFIED.
)U ARE RE		AR PRESC	RIBED EYE PROTEC	ID FOLLOW	MIX	ING INS	TUCTIONS			lotok	K
	PERCENT	DBC#		CRIPTION						QTY	·
	:		*H M I S PER THIS PRODUCT I CONTAMINATION DIRT, RUST OR KETTLE.	S A LAUN	IDRY	ECTION DETERGED LS THAT C'S 674	2, 2820 A	E AVOID LAUNDRY S ND 2940 TO	UCH AS A CLEA	· :	_
	83.700 :	6742	DEIONIZE	D WATER			3014	gal		: 25	,770
	:		MIX WITH HIGH 2820 IS DISPE	AGITATI	ON FO	OR FIVE	(5) MINUT	res or unt	IL DBC	:	<i>30</i>
	.100 :	2820	TINOPAL	C85-X				····		<u> </u>	
			THE REQUIRED AND THEN DISF SHOULD ADD TH				THE BATC	н.		R :	s.
	.000	2940	_	MILLING			>	2 POUND	3	:	
	:		REDUCE MIXER		3/100 5 LOV	O POUND N. ADD D	S) BC 4022 A	ND 7010.		: :	11,,,,,
	150	4022	GLYDANT							:	_73
1,9		:	ADD DBC 7010 EVAPORATION	LOSS. MI	X FO	K AI LL	WEIGHING T AST ONE (TO MINIMIZE 1) MINUTE.	:	:	300
3.49	1.000	7010		OPYL ALC			<u>. </u>			:	<u> </u>
		: :	ACCURATELY W	NEIGH DBC	851 N TH	0 AND 84 E ORDER	120. THES	E WEIGHTS	ARE	: : : ¬	600
	12.000	8510	DUBOIS		·					<u>:</u>	
	3.000	: 8420 :	: DUBOIS	53						: :=====	900
		:	MIXING. AVO	ID FOAMI	VG.	ADD DBC	4255.		•	:	/5
	.050	: : 4255	FABOIS	192						<u> </u>	
		:	MIX FINAL B							(:3	30,000
				REWOR	K AND	ADJUST	MENTS ONL	<u>.Y</u>			
		:		·					:		
		:						·	<u>:</u>	′.'	
		:							:	<u>_</u>	-
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DBC 4255 9/29/88 Superseding 8/31/84 CAS - Certified by supplier as listed under TSCA DOT - None Change - Add Source

FABOIS 192

(perfume for SOFT/SOUR)

. PHYSICAL & CHEMICAL PROPERTIES:

Specific Gravity	d 25/25	0.9732
Refractive Index	n D20	1.4800
Flash Point	•	199°F
Shelf Life		l year.

CONTROLS:

	0dor	Characteristic	Compare to standard
•	Specific Gravity	0.97 <u>+</u> 0.005 @ 25°C	B 003
@ .	Refractive Index	1.4800 <u>+</u> 0.005 @ 20°C	В 007
	Flash Point	199 <u>+</u> 2°F	B 010

SOURCE:

- International Flavors & Fragrances Fabois 192
 1515 Highway 36
 Union Beach, New Jersey 07735
- 2. Noville Fabois 192 1312 Fifth Street North Bergen, N.J. 07047 Phone: 201-867-9080
- 3. International Aromatics Inc. (Fabois 192-USA-87-1578) 530 Commerce Street Franklin Lakes, New Jersey 07417 (201) 405-0058

DBC 8420 11/11/87

Superseding - 1/23/79 CAS - 9016-45-9

DOT - None

Change - Update Sources

DuBOIS 53

Nonylphenoxypoly (ethyleneoxy) ethanol (Nonylphenol plus 6 moles Ethylene Oxide)

CHEMICAL & PHYSICAL PROPERTIES:

Type Active Ingredients Appearance - 25°C

Specific Gravity - 25°C Solubility in Water Solvent Solubility

Moisture Neutralization Number (mg KOH of 1 gm. of sample to pH of 7.0)

Surface Tension - 1% Soln. Distilled Water Ross Miles Foam - 1% Soln. Distilled Water @ 80°F

Nonionic 99% Minimum Clean, essentially colorless, slightly viscous liquid. 1.038 Very slightly soluble Soluble in ethanol, Butyl Cellosolve and Stoddard Solvent. 0.5% Maximum 0.5 Maximum

28.7 dynes/cm

30/45 mm Initial Foam

CONTROLS:

Specific Gravity - 25°C Ross Miles Foam - 1% Soln. in Distilled Water - 80°F 1.030 - 1.04330 - 45 mm Initial

B 003 B 002

SOURCES:

- General Aniline & Film Igepal CO-530
 Texaco Surfonic N-60
- 3. Olin Chemical Company Polytergent B-200
- 4. Witco Chemical Retzanol NP-60

DBC 8510 10/21/88

Superseding 5/27/86 CAS - 9016-45-9 DOT - None Change - Add Source

DuB01S 630

Nonylphenoxypoly (ethyleneoxy) ethanol Nonyiphenol Plus 9-10 Mols. of Ethylene Oxide

CHEMICAL & PHYSICAL PROPERTIES:

Non ionic Type 100% Active Ingredient

Slightly viscous, almost State @25°C

colorless liquid

1.06 Specific Gravity 25°C Moisture 0.5% Max.

Neutralization Number

(mg KOH/1 gm sample to pH 7.0) 0.5 Max.

Cloud Point - 1% in Distilled

54°C Water

Surface Tension

1% soln. in Distilled 31 dynes/cm

Water Ross Miles Foam

1% soln. in Distilled

170-200 mm Initial Foam Water

CONTROLS:

Clear, colorless, viscous liquid. 1.048 - 1.072 B 003 Appearance Specific Gravity 25°C

Cloud Point - 1% in Distilled B 006 52-56°C Water

SOURCE:

- General Aniline & Film Corporation Igepal CO 630
- Oil Chemicals Polytergent B-300
- Texaco Chemicals Surfonic N-95
- Union Carbide Tergitol NP-9
- Polaquimia S.A. (Surfacpol 909) Mexico
- Thompson-Hayward (T-Det N9.5) 5200 Speaker Road Kansas City, Kansas 66106 (913) 321-3131

DBC 2940 1/19/88

Superseding - 5/11/87

CAS - 4474-24-2

ECOIN - 351684 DOT - None

Change - Correct Name on

2nd Source

SANDOLAN MILLING BLUE NBL STANDARD

PS86-1047

Code 1-1157-0-050

PHYSICAL & CHEMICAL PROPERTIES:

AATCC Name Color Index No. Acid Blue #80 #61585

CONTROLS:

Make a laboratory sample of SUPER LAUNDRY LIQUID DETERGENT. The color must be comparable to a standard.

SOURCE:

- 1. Sandoz Colors & Chemicals E. Hanover, New Jersey 07936
- 2. International Dyestuffs Corp. (Acid Blue #80) 50 Page Road P.O. Box 2169 Clifton, New Jersey 07015 (201) 778-0122

LC/cs

DBC 2820

3/7/89 Superseding CAS - 27344-41-8

DOT - None

Change in - Properties & Controls

TINOPAL CBS - X

A hypochlorite stable cotton fluorescent whitening agent of the distyryl biphenyl type.

PHYSICAL & CHEMICAL PROPERTIES:

рĦ

7.5-8.5 (lglL)

Particle Size

95% through 50 mesh

*Optical Strength

0.570

CONTROLS:

@ Appearance Solubility

Bright yellow free flowing relatively, nondusting bead

A 2.5% distilled water solution is clear and free of insolubles at 22° C.

*Optical Strength

Not less than 0.553 (97% strength)

SOURCE:

Ciba-Geigy Corporation Specialty Chemicals Department 3385 Harwinton Lane Cincinnati, Ohio 45211 @ in North Carolina (919) 292-7100

*The optical density is measured on the "Spectronic 20" at 350 nm using a 5 ppm solution in distilled water with a 1 cm quartz cell. Distilled water serves as a blank solution for the optical strength measurement.

No less than 100 mg/L of Tinopal CBS-X should be weighed out in preparation of the stock solution.

Div. of Chemed Corporation

		DBC 7010 8/2/83	
ISOPROPY:	L ALCOHOL (ISOPROPANOL 99%)	Superseding 10/17/78 @ ECOIN 24105	÷
PHYSICAL	& CHEMICAL PROPERTIES:	CAS 67-63-0 DOT Flammable Change - Add ECC)1N #
•	Color	Water White	,
	Specific Gravity	0.785 - 0.789	
	Distillation	81 - 83°F	
	Flash Point (Open Cup)	55°F.	
CONTROLS			
CONTROLS	Color	Manager 188	
		Water White	
	Specific Gravity	0.785 - 0.789	В 003
	Flash Point	55°F	В 013
SOURCE:			
	Pennwalt	Shell	•
	Enjay	Eastman	
	Petro	USI	
	Union Carbide	Hess	

Dubois CHEMICALS CONFIDENTIAL

DBC 7240 2/25/88 Superseding 2/4/85 CAS - 9038-95-3 DOT - None Change in - Source Deletion

UCON 50-HB-5100

A polyalkylene glycol

PHYSICAL & CHEMICAL PROPERTIES:

Specific Gravity @ 20°/20°C	1.063
Viscosity, SUS 100°F	5100
Flash Point (COC), °F	450
Pour Point, °F	-20
pH - 10% aqueous solution	6.5
@ 25°C	
% water, Wt., maximum	0.3

CONTROLS:

Viscosity at 100°F., SUS

4700 - 5500

K 002

Appearance

Clear, free of suspended matter

SOURCE:

- 1. Union Carbide Ucon 50-HB-5100
- 2. Jefferson Chemical WL 5000 L
- 3. Olin WS 5100
- 4. Mazer Macol 5100

DBC 2870
7/19/85
Superseding 5/17/83 (Metanil ECOIN - 303934 Yellow D\
CAS - 587-98-4
DOT - None
Change - Name & Source

@ Acid Yellow #36

Metanil Yellow Dye

Physical and Chemical Properties:

Sodium salt of m (p-anilinophenylazo) benzene

Sulfonic acid

Color Index Number

13065

Hilton Davis Number

204401

Type

Acid Yellow # 36

Control Test:

Make a laboratory sample of FLOW or SUDS. Color must be comparable to a standard.

Source:

BASF Wyandotte Corporation (Basacid Yellow 232) Pigments 491 Columbia Avenue Holland, Michigan 49423 Telephone: 616-392-2391

Atlantic Industries, Inc. (Metanil Yellow Concentrate) P.O. Box 216
Nutley, New Jersey 07110
Telephone: 201-235-1800

Ciba-Geigy Corporation (Pergacid Orange 5G)
Dyestuffs & Chemicals Division
P.O. Box 18300
Greensboro, N.C. 27419
Telephone: 919-292-7100

DBC 2900 5/17/83 Superseding 9/13/78 @ ECOIN - 150383 CAS - 1934-21-0 DOT - None Change - Add ECOIN #

FD&C Yellow # 5 DYE

Physical and Chemical Properties:

Type Formula Tartrazine

Trisodium salt of 3-carboxy-5-hydroxy-1-p-sulfophenyl-4-p-sulfophenylazo-pyrazole

Color Index F.D. & C

19140 approved

Control:

Make up a laboratory batch of DRI IT Color must be comparable to standard

Source:

Hilton Davis Division of Sterling Drug Cincinnati, Ohio

H. Kohnstamm & Co., Inc. Keystone Ingham

Dueois CHEMICALS CONFIDENTIAL

DBC 2840 5/17/83 Superseding 9/13/78 @ ECOIN - 155109 CAS - 2650-18-2 DOT - None Change - Add ECOIN #

HIDACID AZURE BLUE

PHYSICAL AND CHEMICAL PROPERTIES:

Dye Content Color Index Number Color Index Classification Structure

Appearance

68% Pure Dye
42090
Acid Blue #9
Disodium salt of 4-{[4-(N-ethyl-rsulfobenzylamine) phenyl]
(2-sulfoniumphenyl) methylene}
[1-(N-ethyl-N-p-sulfobenzyl)A 2,5-cyclohexadienimine]
Powder - See Note* for liquids and/or pastes.

CONTROLS:

Make up in DuPAN Premix Should give standard color in DuPAN

*Note - If these products are used, adjust formulas by multiplying dye requirement by these factors:

50% Liquid = 2.00 60% Liquids = 1.67 65% Paste = 1.54

SOURCE:

Keystone - Ingham

DuA	(019)		C	MAKE SH	EET)		PAGE	1	
		ISSUE DATE		PRODUCT NAME					
HERE THE ACCE	NT IS ON QUALITY	EFFECTIVE D	07/28/89 MATE	FABRI-SL PRODUCT TYPE	JKE				
•	02824-A		07/28/89	LIQUID	LAUNDRY	DETERGEN	T CHANGE	· · · · · · · · · · · · · · · · · · ·	
TAKE DATE		SUPERSEDE	02824-A DTD.	4/17/89		CHANGE			
10.		l		BATCHS	30,00	0 £ 3	3536yal	•	
YES	□ NO □			PRODUCED (#	•	CETTLE-MIXER	OPERATOR	SUPERVISOR	OK TO DRUM
CK			H COMPLETE					TV COLUBRATI	UT SPECIFIED
J ARE REC	DUIRED TO WE	AR PRESC	RIBED EYE PROTECT	TION AND GLOVES.	IN ADDITI	ON TO ANY	OTHER SAFE	14 EGOIFINE	HOKOK .
	xotok			D FOLLOW MIXIN					QTY
	PERCENT	DBC#		DOTE	CTION	INDEX -	D	:	
	: : :		*H M I S PER THIS PRODUCT I CONTAMINATION DIRT, RUST OR KETTLE.	S A LAUNDRY D	ETERGENI	, PLEASE CAN SOIL 2820 AN	LAUNDRY S ID 2940 TO	UCH AS : A CLEAN:	Populs
	83.700 :	6742	DEIONIZE	WATER		3014	gal	:	25,110
	:		MIX WITH HIGH 2820 IS DISPE	AGITATION FOR	R FIVE (5) MINUT	ES OR UNTI	L DEC	30
	.100 :	2820	TINOPAL	C85-X		·			30
ı	:		THE REQUIRED AND THEN DISP SHOULD ADD TH	AMOUNT OF DYE		HE BATCH			
	.000	2940	~	MILLING BLUE		-	2 POUNT		:
-			REDUCE MIXER	30 GRAMS/1000 SPEED TO LOW.	ADD DB) C 4022 A	ND 7010.		•
	150	4022	GLYDANT		,				: 45
<i>7</i>		:		IMMEDIATELY /	AFTER WE AT LEAS	IGHING TO T ONE (1	O MINIMIZE) MINUTE.	•	:
3.4°	1.000	7010		OPYL ALCOHOL		<u> </u>			: 300
•		:	ACCURATELY W	EIGH DBC 8510 D THEM IN THE	AND 842 ORDER L	O. THESE	WEIGHTS	ARE	:
	12.000	: : 8510	DUBOIS						:3600
		: 8420	: DUBOIS	53					900
		:	MIVING AVO	ID FOAMING. AC	D DBC 4	25 5 .			:
•		:	FABOIS			•	·		: /5
-	.050	: 4255		· · · · · · · · · · · · · · · · · · ·	(10) MTN	UTFS.			(:30,00
		:	MIX FINAL B	ATCH FOR TEN REWORK AND					
		_ 		KEWUKK AND				:	
•	<u> </u>	: :				·			<u></u>
		: :	•					· · · · ·	·
	•	<u> </u>						:	· · · · · · · · · · · · · · · · · · ·
•		:						. ,	•

DBC 4255 9/29/88 Superseding 8/31/84 CAS - Certified by supplier as listed under TSCA DOT - None Change - Add Source

FAB01S 192

(perfume for SOFT/SOUR)

. PHYSICAL & CHEMICAL PROPERTIES:

Specific Gravity	d 25/25	0.9732
Refractive Index	n D20	1.4800
Flash Point		199°F
Shelf Life	· · · · · ·	l year.

CONTROLS:

	0dor	Characteristic	Compare to standard
	Specific Gravity	0.97 <u>+</u> 0.005 @ 25°C	B 003
0	Refractive Index	1.4800 <u>+</u> 0.005 @ 20°C	В 007
	Flash Point	199 <u>+</u> 2°F	B 010

SOURCE:

- International Flavors & Fragrances Fabois 192
 1515 Highway 36
 Union Beach, New Jersey 07735
- 2. Noville Fabois 192 1312 Fifth Street North Bergen, N.J. 07047 Phone: 201-867-9080
- 3. International Aromatics Inc. (Fabois 192-USA-87-1578) 530 Commerce Street Franklin Lakes, New Jersey 07417 (201) 405-0058



D U B O I S C H E M I C A L S DIVISION OF CHEMED CORPORATION DUBOIS STREET & UNION AVENUE . EAST RUTHERFORD, N. J. 07073

October 14, 1988

Mr. Allan Edwards, Chief Bureau of Release Prevention State of New Jersey Dept. of Environmental Protection Division of Environmental Quality CN027, Trenton, N. J. 08625

Dear Mr. Edwards:

Enclosed is our TCPA registration form. We do not, at this time, handle extraordinary hazardous substances in excess of the registration quantities as indicated. Sincerely yours,

DUBOIS CHEMICALS INC.

James Walsh

James Walsh Environmental & Safety Manager

/ech

copy: G. Peacock - w/encl.

M. Hacket

J. Dodd

R. R. Keast

New Jersey Department of Environmental Protection Division of Environmental Quality CN 027, Trenton, NJ 08625

TOXIC CATASTROPHE PREVENTION ACT

REGISTRATION FORM



ECTION		
. Legal Name of Registrant DuBois Chemicals, Inc.	·	
. Nature of Business Blender of cleaning com		
. NJ Employer ID # 69495400000	APEDS # (if any)	
NJPDES # (if any) <u>NJ0035769</u>	PWS # (if any)	
Facility Location Union Ave. & DuBois St. E		,
No. Street Registrant's Mailing Address Union Ave. & DuBois S	City	
.Vo. Sireel	.	•
East Rutherford City	New Jersey 07073 State Zip	•
	Asst. V.P. Plant Mgr (201) 933-2300	
	Tele # <u>(201) 933-2300</u>	
. Title Safety & Environmental Manager		-
SECTION B		
Does this site or water treatment system use, manufacture, store Substance (EHS) listed in Table I of N.J.A.C. 7:31-2.3 as a raw r	e, handle or generate at any time an Extraordinarily Hazardous material, intermediate, final product, by-product or waste product?	
X Yes No If "No", sign the certification below.	If "Yes", proceed to Question 2.	
	e, handle or generate within any one hour period an Extraordinarily hal product, by-product, or waste product equal to or in excess of 2.3?	, ·
Yes X No If "No", sign the certification below. If "Yes"	",complete this registration form and sign the certification below.	
SECTION C - CERTIFICATIONS		
Highest Ranking Official of Site/Water Treatment System		
l certify under penalty of law that the information provided in t	this document is true, accurate and complete. I am aware	
that there are significant divil and criminal penalties for submi	itting faise, inaccurate or incomplete information, including	
fines and/or imprisonment.	(P) £ 17 (988	
Signature Signature	Date	_
Name (Print) Angelo Pennisi	Title Asst. V.P. Plant Mor.	·
Name (Find)	11110	-
Principal Executive Officer, General Partner or Proprietor, Ra	anking Elected Offical	
I certify under penalty of law that I have personally examined	l and am familiar with the information submitted in this docu- juiry of those individuals immediately responsible for obtainin	na
the information, I believe that the submitted information is true	ie, accurate and complete. I am aware that there are signifi-	J
cant civil and criminal penalties for submitting false informati	ion, including the possibility of fine and/or imprisonment.	
Signature.	Date / C/11/88	_
Name (Print) - Russell R. Keast	Title Senior Vice President	
	Health, Safety & Environmental Aff	airs



HEALTH, SAFETY & ENVIRONMENTAL AFFAIRS DEPARTMENT 3630 EAST KEMPER ROAD • SHARONVILLE. OHIO 45241 • (513) 769-4200

December 16, 1987

bcc: R. R. Keast

State of New Jersey Department of Environmental Protection Division of Environmental Quality 401 East State Street CN U27

L. A. Westenberg A. A. Pennisi

Trenton, New Jersey 08625

ATIN: Mr. Allan T. Edwards

Chief, Bureau of Release Prevention

Dear Mr. Edwards:

In May 1986, DuBois Chemicals East Rutherford Branch filed a registration form under the Toxic Catastrophe Prevention Act. Hydrogen Chloride contained in Hydrochloric Acid was registered as being used and stored in our plant.

Recent proposed regulations under the NUTCPA further defined Hydrochloric Acid as being listed 36% HCL or greater.

The Hydrochloric Acid purchased and used by DuBois Chemicals has a specification of 31.2% minimum HCL and 33.3% maximum HCL.

Attached is a Technical Data Sheet from our supplier of Hydrochloric Acid.

I am requesting that this information be added to our NUTCPA filing to clarify our HCL usage.

Under the new regulations we would be exempt from registering HCL less than 36%.

If you have any questions or would like to discuss this, please call me at (513) 769-4200.

Thank you,

Gary Peacock L

Senior Regulatory Specialist Health, Safety & Environmental

Affairs Department

GP/kn



REAGENT CHEMICAL & RESEARCH INC.

124 River Road Middlesex, New Jersey 08846

HYDROCHLORIC ACID

TECHNICAL DATA



SECTION I PROPERTIES

FORMULA
MOLECULAR WEIGHT
APPEARANCE
SPECIFIC GRAVITY
BOILING POINT
BULK DENSITY
FREEZING POINT
COLOR
SOLUBILITY

VAPOR PRESSURE

HCL 36.5 LIQUID @ 20° C 1.1600 - 1.1789 .110° C / 230° F 9.671 - 9.828 LBS./GAL -63° F / -53° C CLEAR TO SLIGHT YELLOW VERY SOLUABLE IN WATER 50 - 60 MM Hg @ 20° C

SECTION II TYPICAL ANALYSIS

BAUME*
% HCL
COLOR
EXTRACTABLE ORGANIC MATTER
FREE CHLORINE
IRON AS FE
ARSENIC
SULFATE

20° - 22.5° 31.45% - 35.21% LT 50 APHA LT 5 PPM MAX LT 30 PPM MAX LT 5 PPM MAX LT 1 PPM MAX LT 500 PPM MAX

SECTION III SALES OFFICES

MIDDLESEX, NEW JERSEY
ST. GABRIEL. LOUISIANA
HOUSTON, TEXAS
CHARLOTTE, NORTH CAROLINA
CHICAGO, ILLINOIS
ST. LOUIS, MISSOURI
MORE, OKLAHOMA

1-201-469-0100 1-800-535-9985 1-713-626-1843 1-704-365-3241 1-312-323-1700 1-314-968-0501 1-405-799-9932

Ashland Chemical Company

Ashland Chemical Company

Ashland Chemical Company

Ashland Chemical Company

P. O. BOX 2219, COLUMBUS, OHIO 43216 • (514) 889-3333

DBC-0020

MATERIAL SAFETY R - 1 DATA SHEET

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

001637	CH:	ROMIC ACID FL	AKE	PAGE: 1
THIS MSDS COMPLIES	WITH 29 CFR	1910.1200 (TH	E HAZARD COMMUNI	
***********	*******	*********		
PRODUCT NAME: CHROMIC CAS NUMBER:				
			DS 50 005 273	3540-
DUBOIS CHEMICAL PO BOX 41268 CINCINNATI	60		DATA SHEET NO: LATEST REVISION	0004446-003 Date: 11/85-85326
CINCINNATI	OH 4524	1	PRODUCT: 31912 INVOICE: 56107	00
•			INVOICE DATE: 0	9/06/85
			TO: DUBOIS CHEM 3630 EAST K	EMPER ROAD
ATTN: PLANT MGR.			CINCINNATI	OH 45241
	SECTION T.	-PRODUCT IDEN		

GENERAL OR GENERIC ID:	ANHYDRIDES			
HAZARD CLASSIFICATION:	(07) OXIDIZE	R (173.151)		
	BECTION I	T-HAZARDOUS C	OMPONENTS	
INGREDIENT				
********	N (BY)	VT) PEL	TLV	NOTE
CHROMIUM TRIOXIDE	IDENTIFIE	95 0.1 D AS A CARCIN	0.05 MG/M Ogen by NTP, iar	(1) E
(1): THE PEL AS CROJ,	TLV AS CR. NI	OSH PECOMMEN		
CR) - 8 HOUR TIMÉ	WEIGHTED AVER	RAGE.		ors was con the
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	SECTION	J III-PHYSICA	L DATA	
PROPERTY		REFINEMENT		and the second s
• • • • • • •	•		•	MEASUREMENT
INITIAL BOILING POINT	NOT APPLICAE	BLE		
VAPOR PRESSURE	NOT APPLICAS	} L E		
VAPOR DENSITY	NOT APPLICAT			
BPECIFIC GRAVITY				
				2.706 9 77.00 DEG F
BEDEEUT MOLATTA				(25.00 DEG C)
PERCENT VOLATILES	NOT APPLICAB	:LE		
EVAPORATION RATE	NOT APPLICAB	LE		
		•		
	SECTION TH	5705 140 540		
		FIRE AND EXP	LOSION DATA	
FLASH POINT NOT APPLICA	ABLE			
EXPLOSIVE LIMIT	NOT APPLICA	BLE		
EXTINGUISHING MEDIA: WAT				
HAZARDOUS DECOMPOSITION		V F00M 70V70		
				•
BPECIAL FIREFIGHTING PROFULL FACEPIECE OPER AND FULL BODY PROTE				PPARATUS WITH A E PRESSURE MODE
UNUSUAL FIRE & EXPLOSTOR	J MAZADOS. TH	TE MATERIAL :		IDIZER. CONTACT
WITH COMBUSTIBLE MA				
		ABILITY- D	REACTIVITY- 1	
OXIDIZING MATERIAL		<i>;</i>		
	SECTION	V-HEALTH HAZA	ARD DATA	•••••••
PERMISSIBLE EXPOSURE LEV	EL	.1 MG/M3		
THRESHOLD LIMIT VALUE		.05 MG/M3		
SEE SECTION II				
EFFECTS OF OVEREXPOSURE:	FAR 880000-			
			· ·	•
EYES - CAUSES SEVERE DAM Skin - Can Cause Irritat Breathing - Can Cause Pe	PEOPLETANI CHRI	DME SORES".		
SWALLOWING - RESULTS IN RESULT IN DEATH ON	SEVERE DAMAGE		.c.c	P TISSUES, CAN
FIRST AID:				

IF ON SKIN: IMMEDIATELY FLUSH EXPOSED AREA WITH WATER FOR AT LEAST 15 MINUTES, GET MEDICAL ATTENTION. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

Ashland Chemical Company

WASHLAND OIL INC.

P. O. BOX 2219, COLUMBUS, OHIO 43216 . (614) 889-3333

Ashland.

MATERIAL SAFETY ___DATA SHEET

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

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							CHR	JMIC	ACIE	FLA	KE				,	PAGE:
					SECTI	ON V	MEAL		A 7 A D C							
	INEYE	S. I	MEDI	ATEL	V FÜL		T 1 1 4	065	A M 01	INTE	A- 14				ST 15 ATE MED	
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SMAL	L SPI	LL: C	OLLEC	T IN	BEAR	CER.	. •							_		
LARG	E SPIL	L: 6	HOVEL UP AN	MAT Y RE	ERIAL	INTO	CON TERIA	TATI L.,	VERS.	THO	POUC	SHLY	SWEEP	AREA	OF SPI	LL
WAST	E DIS	OSAL	METH	00:												
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LARG	E SPIL REGUL	ATIO	ISPOS NS.	E OF	IN A	CCORE	DANCE	WIT	TH ALI	L LOC	CAL,	STAT	E AND	FEDER	PAL	
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				-===							ENT	TO B	E USEC) 		
RESP	IRATOR NIOSH OF PR	Y PRO I/MSHA IOPER I/MSHA MENT	TECT JOI ENVI RES	ION: NTLY RONM: PIRA	IF T APPR ENTAL TORS	LV OF OVED CONT UNDER	THE AIR (ROL. SPE	PRO	DUCT	OR A	NY C	OMPO	NENT I S ADVI O PERP EE YOU NIROLS	S EXC	EEDED, N ABSEN	, ČE
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	OTHER	TYPE	SAF	ETY (GLASS	ES. (CONSI	ÍĽT	YOUR	SAFE	TYE	QUIP	MENT S	UPPLI	ER)	. 1
OTHER	PROT		E EQ	JIPME	ENT:	TO PR	EVENT	SK	IN CO	NTAC	T, W	EAR 3	EMPERV	IOUS	CLOTHIN	ıG
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													OMMEN	TS		
CONTA	INERS	OF T	HTC .		3744								SINCE D/OR S SERVED			
			•													

OVEREXPOSURE TO MATERIAL HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS:, LIVER ABNORMALITIES, LUNG DAMAGE

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH ASHLAND OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

		1 PROD	UCT IDENT	IFICATION		DB	c 0320	
		ee Chemical NE, Suite 67 a 30326	70	REGULAR : EMERGENO	TELEPHON Y TELEPH	NE NO. (1	404) 233-6 Chemtrec	811 800-424-9
RADE NAME	Ferric Su	lfate	HER		•		•	
YNONYMS	Ferri-Flo	С	PP-B				,	
HIPPING AME	DOT: Fer	ric sulfate, c	rude NA	A 9121 OI	RM-E	RQ= 1	000 lbs.	
		II HAZA	RDOUS INC	REDIENTS2		•	• • •	
	MATERIAL OR CO	MPONENT	·	CAS NO.	w‱		HAZARD (PATA
Fer	ric sulfate			100-28- 22-5	89.0		h hazard: orally, is	
Fre	e sulfuric ac	id		7664-93-9	2.7	to the	eye; but ally, does	is not toxi
							cin, and in exceeds 1	
				·		Aquat listed	ic toxicity as toxic t	o aquatic
		· · · · · · · · · · · · · · · · · · ·					Category (116 - 118	
		111	PHYSICAL	DATA	· ·	•		•
DILING POINT, 760 MM	нс ,	N	.A.*	MELTING PO	INT	N.	Α.	
ECIFIC GRAVITY (H.0 Bulk Density	- 1)	56 - 60	lbs/ft ³	VAPOR PRESSURE N.A.				
APOR DENSITY (AIR =		N.	.A.	SOLUBILITY	IN Н ² О %	BY WT	55% by w	right
VOLATILES BY VOL.		· No	one	EVAPORATION HATE (BUTYL ACETATE = 1) N.A.				
PEARANCE AND ODOF	l .	Grey to brow to granule.	vn powder				wder iter pH 4.	
		IV FIRE	AND EXPLO	a 1% wgt SION DATA	. solut	ion in	distilled w	ater has pH 2.1
ASH POINT (ST METHOD)	None	2		AUTOIGNITIE TEMPERATU		No	ne known	
AMMABLE LIMITS IN A	IR, % BY VOL.		LOWER	N.A.	UPPI	ER	. N.A.	
TINGUISHING DIA		cal may be u		t is presen	t in a f	ire, w	ater, CO2	, or
L FIRE ING PCEDURES	water show	used, the pull not be all C, product	owed to en	ter a naviga	able st	ream.	At tempe	ratures
IUSUAL FIRE ID EXPLOSION	None know	~						,

V HEALTH HAZARD INFORMATION

- HEALTH HAZARO DATA	HAZARD CLASSIFICATION	BASIS FOR CLASSIFICATION	SOURCE
POUTES OF EXPOSURE			
INHÁLATION	Low	Acute inhalation LC50 = In excess of 147.9 mg/l of air	Determined b Toxicological Laboratory to
SKIN CONTACT	Not irritating to the skin. In accordance with FHSLA regulations	Skin irritation index = 0	Determined by Toxicological Laboratory to
SKIN ABSORPTION	Not toxic dermally. In accordance with FHSLA regulations.	Acute dermal LD ₅₀ (rabbits) (Male) In excess of 2 g/kg body wt. (Female) 2.0 g/kg body wt.	Determined b Toxicological Laboratory to
EYE CONTACT	Corrosive to the eye.	Eye irritation scores: 24 hrs. 45.2 48 hrs. 56.2 72 hrs. 56.3 7 days 63.4	Determined b Toxicological Laboratory to
INGESTION	Toxic orally. In accordance with FHSLA regulations.	Acute oral LD ₅₀ (rats) = Between 1 - 2.5 g/kg bodywt.	Determined b Toxicological Lbboratory
FFECTS OF OVEREXPOSURE			
ACUTE OVEREXPOSURE	None known except as li	sted in Section V above.	
. CHRONIC OVEREXPOSURE	None known except as li	sted in Section V above.	•
	yes with large amounts of	water for at least 15 minutes.	Hold eyelids
SKIN: Wash with	nwater Remove shoes if	in a shower. Remove and wash	alathas bafara

. Remove worker from exposure and seek medical aid.

Treat as a corrosive liquid. Drink large quantities of water or milk to reduce concentration. Seek medical aid immediately.

NOTES TO PHYSICIAN

INHALATION:

None known.

None known. Product is highly water soluble and solution is highly corrosive to mild steel, copper, copper alloys, and galvanized steel. Strong solutions may be corrosive to paints, enamels, and concrete.

HAZARDOUS DECOMPOSITION PRODUCTS

None normally. At temperatures above 600° C, sulfur trioxide may be released.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

None known.

VII DISPOSAL, SPILL OR LEAK PROCEDURES

AQUATIC TOXICITY (E.G. 96 HR. TLM):

No data are known to be available. EPA has rated product in Category C in the Water Programs hazardous substances list in 40 CFR Parts 116 - 118.

NASTE DISPOSAL METHOD

Remove dry product to approved land fill. If solution, neutralize with lime, soda ash, or bicarbonate and remove to approved land fill.

S TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

If spill is dry product, sweep up spill and dispose in approved land fill and wash down spill area with water. If spill is a solution containing product, neutralize an remove to approved land fill. Wash down spill area with water. Check with waste treatment plant before flushing down large amounts of spilled product.

Lime, soda ash, or bicarbonate.

VIII SPECIAL PROTECTION INFORMATION

JENTILATION REQUIREMENTS

Product is a nuisance acid dust. Normal ventilation is suggested as product is irritating to the eyes and mucous membranes. If sufficient product is placed in eye, it may be corrosive to the eye.

FECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY (SPECIFY IN DETAIL) While not required, a chemical dust mask is suggested.

Chemical goggles are recommended when handling product because dust is irritating and corrosive if in eyes.

Chemical or rubber gloves may be worn. Product is not irritating to the skin, nor is it toxic dermally.

OTHER CLOTHING AND COUPMENT

DVES

No other special clothing or equipment than normally used.

PRECAUTIONARY STATEMENTS

None on product. If in solution, product is corrosive.

OTHER HANDLING AND STORAGE REQUIREMENTS

Store product in a dry place.

While product has been determined not to be irritating to the skin, it is an acid salt and may cause some irritation to the skin as it picks up moisture. Dust accumulations on hands, face, and body should be removed by washing or showering periodically as necessary.

ADDITIONAL REGULATORY CONCERNS

FEDERAL:

FDA

USDA

CPSC

TSCA IS THIS PRODUCT, OR ALL ITS INGREDIENTS; BEING CERTIFIED FOR INCLUSION ON THE TOXIC SUBSTANCES CONTROL INVENTORY OF CHEMICAL SUBSTANCES? Yes

OTHER Product meets American Water Works Association standard for ferric sulfate in potable water. B 406-64.

STATE:

OSHA: Product is a hazardous material as defined by 29 CFR 4 1910. 1200 because it is corrosive to the eye.

Product is not listed by the National Toxicology Program, the International Agency for Research on Cancer, nor the Registry of Toxic Effects of Chemical Substances (1981-82) as a carcinogen or potential carcinogen.

1			•
	PREPARED BY	Arthur F. Gohlke, Ph.D.	The above information is believed to be correct. However, Tennes
,	. •		Chemical Company makes no war
	TITLE:	Technical Service Specialist	and assumes no liability as to the
НМ	COMPANY:	Tennessee Chemical Company	accuracy or completeness.
Revised 3-28-85	ADDRESS:	3475 Lenox Road NE, Suite 670 Atlanta, Georgia 30326	

TECHNICAL DATA

Hazardous Materials Identification System (HMIS)

OSHA has issued rules and regulations 1) which require chemical manufacturers and importers to label containers they ship and provide required material safety data sheets by November 25, 1985. It also requires all employers covered by this standard to be in compliance by May 25, 1986, which includes among other things labeling containers, training employees, and providing hazard information on hazardous chemicals which they may handle.

We have updated our material safety data sheets (MSDS) to comply with this Federal rule as best we understand it and these are available from us on our products. The MSDS requires supplying the hazard information. Some employers are also requesting HMIS ratings information which is being promoted by several associations but is not required by OSHA as part of the MSDS. At least four industry associations have developed guidelines to voluntary systems of hazardous materials ratings. These include the National Fire Protection Association ²⁾, the National Association of Printing Ink Manufacturers ³⁾, the National Paint & Coatings Association ⁴⁾, and the Manufacturing Chemists Association ⁵⁾.

While these rating systems are voluntary and are not necessarily standardized and to our knowledge are not required nor even endorsed by OSHA in their Rule, we have rated our products according to these voluntary systems only as a guidance to those customers to whom they may be useful. Use of these ratings along with one of the above "systems" is not to be construed to be in compliance with OSHA Hazard Communication Rule or a state's Right-To-Know law nor to replace our MSDS forms. The different systems use different criteria, some of which are subjective, so my interpretation of the ratings may differ slightly. All have the same basic rating of 0 to 4 with 0 being the least hazard and 4 being the most serious hazard classification

(continued on reverse)



TENNESSEE CHEMICAL COMPANY

BASIC PRODUCERS OF COPPER, SULFUR, ZINC AND IRON COMPOUNDS

1475 Lenox Poad N.E., Suite 570, Atlanta, Gerrife 20206 - Prone (202, 200-881) - Tonio 54/2021 Western Region - 500 Clark Street, Prisporal California 945(3) - Prone, 415(4) (4)(10)

¹⁾ Federal Register, Vol. 48, No. 228, November 25, 1983, pp. 53280-53348.

²⁾ NFPA 70:, Identification System Fire Hazards of Materials, 1980.
National Fire Protection Association, Inc., Quincy, MA 02269.

³⁾ HMIS - Guidelines for a Hazardous Materials Identification System for Raw Materials (1984). National Association of Printing Ink Manufacturers, Harrison, NY 10528.

⁴⁾ Hazardous Materials Identification System. National Paint & Coatings Association, Washington, D. C. 20005.

⁵⁾ Manufacturing Chemists Association, Washington, D. C.

Product and Hazard Croup	NFPA 21	NA PLM 11	112 CN
para-Toluene Sulfonic Acid Solution			
Health	3	3 H	3
Flammability	2	2 F	2
Reactivity	0 .	ÓΒ	0
para-Toluene Sulfonic Acid Anhydrous			
Health	3	3H	3
Flammability	1	1 F	1
Reactivity	1.	1 R	1
AA-10, LA-10, AA-9	_		•
Health	2	2H	2
Flammability	. 1	1 F	1
Reactivity	. 1	1 R	,
OA-5 (R. S. U)	1	2н	2
Health	1	lF	1
Flammability Reactivity	Ö	0R	0
			•
Sulfonic 800	3	3 H	3
Health	1	1 F	. 1
Flammability Reactivity	0	0R	ō
	Ü	•	•
Sul-Fon-Ate OE-500	1	2H	2
Health 🔪 Flammability	ī	1F	ī
Reactivity	oʻ	UR	Ü
·			•
Sulfuric Acid Health	3	. 3H	3
Flammability	0	0F	. 0
Reactivity	. 2	1R	2
Sulfur Dioxide			
Health	3	3H	3
Flammability	0	0F	0
Reactivity	0	OR	0
Copper Suliate (pentahydrate, monohydrat	te. solutions)		
Health	2	3H	3
Flammability	0	0F	0 .
Reactivity	0	OR	0 -
Ferri-Floc (dry powder)			
Health	2	2 H	2
Flammability	0	0F	0
Reactivity	0	OR	0
Ferri-Floc (solution)	•		
Health	3	3 H	3
Flammability	0	0 F	0
Reactivity	0	0 R	0
Sodium Hydrosulfite	•		
Health	2	2H	. 2
Flammability	3 1	3F	3
Reactivity	1	1 R	. 1
Sudium Bisulfite Anhydrous	_	•	
Health	2	2H	2
Flamma bility	1	15	1
Reactivity	1	1R	1

Prepared	by: Arthur F. Gohlke, Ph.D.
Title: T	echnical Service Specialist
Company:	Tennessee Chemical Company
Address:	3475 Lenox Rd. NE. Some 670
	Atlanta, Georgia 30320
	April 1 1985

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ALUMINUM PHOSPHATE SOLUTION **TECHNICAL GRADE**

NOMENCLATURE Aluminum Phosphate, Solution

> Aluminum Phosphate, Acidic Solution Monoaluminum Phosphate, Solution

CAS NUMBER 13530-50-2

CAINDEX NAME Phosphoric acid, aluminum salt (3:1)

> GRADE **Technical**

MOLECULAR 317.96 (Solute) WEIGHT

DESCRIPTION Aluminum Phosphate, Solution is a clear to slightly hazy

white, acidic, aqueous solution.

COMPOSITION P₂O₅: 32.0% minimum

Al₂O₃: 7.4% minimum

TYPICAL pH (1% solution): 2.5 Baumé (at 25° C): 45.5°

Weight (pounds per gallon 25° C): 12.1

CONTAINERS 175 pound net weight (15-gallon) Liqui-pak Drums

350 pound net weight (30-gallon) Liqui-pak Drums

Tank Trucks Tank Cars

USES Ceramics and Glass: As a refractory bonding agent; as an

ingredient of special glasses.

Metal Industry: In the coating of steel.



MAMERY SAFETY DBC 0550 DATA SHEET

AMMONIUM DIMOLYBDATE

EMERGENCY CONTACT

CHEMICAL NAME: Ammonium Dimolybdate

PRODUCT IDENTITY

TRADE NAME: Ammonium Dimolybdate

FORMULA: (NH₄)₂Mo₂O₇ CAS NO.: 27546-07-2 PHYSICAL FORM: Powder CORP. MANAGER OF INDUSTRIAL HYGIE! AMAX INC.

AMAX CENTER

GREENWICH, CONNECTICUT 06836 TELEPHONE NO.: (203) 629-7112

COMPOSITION

MATERIAL	CAS NO.	8	PERMISSIBLE AIR LEVEL
Molybdenum Trioxide	1313-27-5	84.7	OSHA: 5 mg/m ³ ACGIH: 5 mg/m ³
Ammonia	7664-41-7	10.0	OSHA: 18 mg/m ³ ACGIH: 18 mg/m ³
Water	•	5.3	None Listed

HEALTH HAZARD INFORMATION

 $5mq/m^3$ OSHA PERMISSIBLE EXPOSURE LEVEL: $5mg/m^3$ ACGIH THRESHOLD LIMIT VALUE:

TRIMARY ROUTE OF ENTRY: Inhalation

JIMPTOMS AND EFFECTS OF:

ACUTE OVEREXPOSURE: May result in eye or respiratory tract irritation.

CHRONIC OVEREXPOSURE:

USSR studies in 1961 & 1966 found signs of gout in factory workers and among inhabitants of molybdenum rich areas of Armenia. However, a 1979 U.S. study found no evidence of molybdenum induced gout.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY THIS MATERIAL:

Chronic respiratory disease, and gout may be aggravated by exposure to this material.

IS THIS MATERIAL CONSIDERED TO BE CARCINOGENIC BY: NTP?

No IARC? OSHA? No

EMERGENCY AND FIRST AID PROCEDURES

If a person breathes in a large amount of dust, remove from exposure; if breathing has stopped, perform artificial respiration. Call a physician.

If irritation of the eyes, nose or throat occur, remove from exposure, flush eye with water for 15 minutes and call a physician.

EXPOSURE CON ROLL HEASURES

ENGINEERING: Use ventilation to maintain exposure levels within the OSHA limit.

Use a NIOSH/MSHA approved respirator if exposure PERSONAL PROTECTIVE EQUIPMENT: exceed the OSHA limit. Wear eye protection wher

handling material.

REACTIVITY DATA

This material is stable. STABILITY:

INCOMPATABILITY: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Ammonia

HAZARDOUS POLYMERIZATION: Will not occur.

FIRE and EXPLOSION HAZARD DATA

FLASH POINT: Not applicable FLAMMABLE LIMITS: LEL * UEL

EXTINGUISHING MEDIA: Dry chemical or sand.

SPECIAL FIRE FIGHTING PROCEDURES: Wear protective fire fighting clothing and self contained breathing equipment.

JUSUAL FIRE AND EXPLOSION HAZARDS: Temperatures in excess of 200°C will cause

this material to decompose and release

ammonia.

*Do not apply

PRECAUTIONS FOR SAFE HANDLING AND USE

PRECAUTIONS FOR HANDLING AND STORAGE: None necessary.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Clean up by vacuuming to minimize dust exposure. Provide clean-up employees with respirators for dusty conditions.

Dispose of in accordance with federal, state and local WASTE DISPOSAL METHODS:

laws and regulations.

THIS MATERIAL WAS REPORTED ON THE INITIAL TSCA INVENTORY. NOTE:

PHYSICAL/CHEMICAL CHARACTERISTICS

DECOMPOSITION: 200°C SPECIFIC GRAVITY (H₂O=1):

POR PRESSURE @ 20°C: essentially 0 SOLUBILITY IN WATER: 43 gm/100cc @ 25 C

APPEARANCE AND ODOR: White crystalline powder, odorless

DATE PREPARED: Nov. 14, 1985 DATE REVISED: Never give anything by mouth to an unconscious person. Call a physician or the nearest Poison Control Center immediately.

Skin Contact

Immediately remove contaminated clothing under a safety shower. Flush all affected areas with large amounts of water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Obtain medical advice immediately.

Eye Contact

Immediately flush the eyes with large quantities of running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Do not attempt to neutralize with chemical agents. Obtain medical attention as soon as possible. Oils or ointments should not be used. Continue the flushing for an additional 15 minutes if the physician is not immediately available.

Inhalation

Remove from contaminated atmosphere. Seek medical attention if respiratory irritation or breathing difficulty occurs. If the victim is having difficulty breathing, oxygen may be administered, preferably with a physician's advice.

VIII. INDUSTRIAL HYGIENE

Ingestion

All food should be kept in a separate area away from the storage/use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for significant exposure to this material. Before eating, hands and face should be thoroughly washed.

Skin Contact

Skin contact with liquid or its aerosol must be prevented through the use of impervious clothing, gloves and footwear, selected with regard for use condition exposure potential.

Eye Contact

Eye contact with liquid or aerosol must be prevented through the use of chemical safety glasses, goggles or a face shield, selected with regard for use condition exposure potential.

Inhalation

If use conditions generate airborne liquid or aerosol, handle this material only in open (e.g. outdoor) or well-ventilated areas. Where adequate ventilation is not available, use NIOSH-approved respirators to reduce exposures. Respirator selection must address the potential for exposure under the use conditions.

IX. SPILL HANDLING

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices (refer to Section VIII).

Small spills can be handled routinely. Use adequate ventilation and wear a respirator to prevent inhalation. Wear suitable protective clothing to prevent skin and eye contact. Use the following procedures:

Neutralize the spill area with soda ash and then flush area with copious amounts of water. Exercise caution during the neutralization as considerable heat may be generated.

Large spills should be handled according to a predetermined plan. For assistance in developing a plan, contact the Technical Service Department, Industrial Chemical Division, Stauffer Chemical Company, Westport, CT 06880.

IN CASE OF EMERGENCY, CALL, DAY OR NIGHT (800) 424-9300 (CHEMTREC)

X. CORROSIVITY TO MATERIALS OF CONSTRUCTION

This material is corrosive to common metals such as mild steel, copper, brass and bronze. Type 316 stainless steel, rubberlined steel and certain plastics (fiber-glass reinforced) are the preferred materials of construction for process equipment, storage and shipping containers.

XI. STORAGE REQUIREMENTS

The following safety facilities should be readily accessible in all areas where the product is handled or stored:

Safety showers — with quick opening valves which stay open. Water should be supplied through insulated lines to prevent freeze-ups in cold weather.

Eye wash fountains—or other means of washing the eyes with a gentle flow of tap water.

Storage tanks should be properly designed with material which will withstand the corrosive effects of this chemical.

XII. DISPOSAL OF UNUSED MATERIAL

For assistance in disposing of unused material, contact the Technical Service Department, Industrial Chemical Division, Stauffer Chemical Company, Westport, CT 06880.

XIII. DISPOSAL OF CONTAINER

Rinse and offer empty container for recycling, reconditioning, disposal in an approved landfill, or incinerate by means which provide appropriate environmental pollution controls.



MATERIAL SAFETY DATA SHEET

Meeting OSHA Standard 29CFR §1910.1200 (g)



EFFECTIVE DATE: September 1, 1985

SECTIONS SPRODUCINDENDE CARRON STUDY CONTRACTOR OF THE PRODUCING STUDY CON

PRODUCT TRADE NAME Borax

10-mol

CHEMICAL NAME AND SYNONYMS Sodium tetraborate

CAS NO. 1303-96-4

decahydrate

FORMULA: Na₂B₄D₇.10H₂O

HAZARD RATING:

CHEMICAL FAMILY:

NFPA

Borate

0 Health

(HMIS)

0 Flammability

0 Reactivity

A PP

SERTON ETTAVATORIS INGREDIENTS

Material or Component

0/0

Material or Component

0/0

None

SECOND - BINSON TAN

Specific gravity 1.73

Melting point 62°C

Heat of Solution -122 BTU/1b

pH 3% Solution: 9.25

9.25 @ 20°C

Solubility in Water: 5.81% @ 20°C

65.63% @100°C

Appearance: White, odorless,

crystalline solid

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CONTACT: J. C. MIDDLETON

"The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein."

UNITED STATES BORAX & CHEMICAL CORPORATION . 3075 WILSHIRE BLVD., LOS ANGELES, CA 90010

JSBORAX

SECTION IV — HEALTH HAZARD INFORMATION

EFFECTS OF EXPOSURE (SYMPTOMS)

INGESTION:

ACUTE ORAL LD $_{50}$ (rats) 6.13 g/kg. Small amounts (up to 15 grams) - slight nausea, vomiting, diarrhea. Large amounts (15 grams or more) - nausea, vomiting, diarrhea.

EYE: (16CFR §1500.42) Not an eye irritant - may cause slight, reversible conjunctivitis.

SKIN: None

ACUTE DERMAL LD₅₀ (16CFR §1500.40) Greater than 10 g/kg (rabbits).

PRIMARY SKIN IRRITATION INDEX: (16CFR §1500.41) 0

CORROSIVE

NON CORROSIVE: X

INHALATION May cause slight nasal irritation as a nuisance dust.

ACUTE LC₅₀ N/A

EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE/METHOD OF EXPOSURE/SYMPTOMS

Inhalation - sneezing, coughing

Eyes - slight irritation Skin - none known

Ingestion - nausea, vomiting, diarrhea, erythemacous flush

CHRONIC OVEREXPOSURE/METHOD OF EXPOSURE/SYMPTOMS

Inhalation - coughing

Eyes - slight conjunctivitis

Skin - none known

Ingestion - erythemacous flush, macular skin rash: CNS effects. See page 6.

OSHA Permissible Exposure LIMIT (PEL) Not Listed

29CFR §1910 Subpart Z

 $5 \text{ mg/m}^3 (1984-1985)$ ACGIH Recommended Threshold Limit Value No data base.

National Toxicology Program Annual Report on Carcinogens

Year 1983

Listed

Not Listed

International Agency for Research on Cancer (IARC)

Monograph Yes

No X

OSHA CARCINOGEN NO

EMERGENCY AND FIRST AID PROCEDURES:

EYES Flush with tepid water for 15 minutes.

SKIN Rinse with water.

INHALATION Remove to fresh air.

(CONT PAGE 4)

EMERGENCY AND FIRST AID PROCEDURES:

(CONT FROM PAGE 3)

INGESTION

Induce emesis. Drink large amounts of water and/or milk. Consult physician.

Not an acute poison. Ingestion of large amounts (15 grams or more) - gastric lavage, with 5% sodium bicarbonate; Saline cathartic. For further medical management, call emergency number on page 1. See page 6.

SECTION V — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) Not Applicable FLAMMABLE LIMITS

Lel Uel

EXTINGUISHING MEDIA Fire Retardant

SPECIAL FIREFIGHTING PROCEDURES None

UNUSUAL FIRE AND EXPLOSION HAZARDS None

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE X

INCOMPATABILITY (materials to avoid) Elemental Zirconium

HAZARDOUS DECOMPOSITION PRODUCTS None

HAZARDOUS POLYMERIZATION

MAY OCCUR

WILL NOT OCCUR

CONDITIONS TO AVOID Avoid heating with elemental zirconium.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep or vacuum. Rinse area with water.

WASTE DISPOSAL METHOD

Solid land fill or sanitary sewer. Not considered hazardous waste.

SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) Nuisance Dust Mask

VENTILATION

LOCAL EXHAUST X

SPECIAL

MECHANICAL (General)

OTHER

PROTECTIVE GLOVES None Required

EYE PROTECTION Glasses Suggested

OTHER PROTECTIVE EQUIPMENT None

SECTION IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Dry indoor storage.

OTHER PRECAUTIONS Maintain package integrity.

DATE: 9/1/85

UNITED STATES BORAX & CHEMICAL CORPORATION • 3075 WILSHIRE BLVD., LOS ANGELES, CA 90010

₽₽₽₽₽ USBORAX

Note:

Two year feeding studies on rats and dogs showed no appreciable accumulation of boron in the body. Ingested borates are dissipated in the urine -- 70% in the first 24 hours. No adverse effects were noted at the 0.31% dietary level.

Complimentary blood analysis available for physicians and emergency rooms. Medical consultation available.



MATERIAL SAFETY DATA SHEET

Meeting OSHA Standard 29CFR §1910.1200 (g)



EFFECTIVE DATE: September 1, 1985

PRODUCT TRADE NAME Borax 5-mol

CHEMICAL NAME AND SYNONYMS

Sodium tetraborate

pentahydrate

CHEMICAL FAMILY: Borate

CAS NO. 1330-43-4

FORMULA: Na 28 07.5H20

HAZARD RATING: NFPA:

(Hmis)

Health

1 Flammability 0

Reactivity

PP.

0

Material or Component

Material or Component

None

Appearance: white, odorless

crystalline solid

Specific Gravity: 1.815 Melting Point: 200°C

Solubility in Water: 3.60% @ 20°C

50.13% @100°C

When dissolved in water

hydration to the decahydrate takes place. 3% solution @20°C:

CONTACT: J. C. MIDDLETON

"The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein."

UNITED STATES BORAX & CHEMICAL CORPORATION • 3075 WILSHIRE BLVD., LOS ANGELES, CA 90010

SECTION IV — HEALTH HAZARD INFORMATION

EFFECTS OF EXPOSURE (SYMPTOMS)

INGESTION: No human experience.

ACUTE ORAL LD₅₀ 3.4 gram/kg of body weight in rats. Nausea, vomiting, diarrhea.

EYE: (16CFR §1500.42) (rabbits) Irritant

SKIN: No evidence of irritation

ACUTE DERMAL LD₅₀ (16CFR \S 1500.40) Greater than 2.0 g/kg body weight in rabbits.

PRIMARY SKIN IRRITATION INDEX: (16CFR §1500.41) 0

CORROSIVE

NON CORROSIVE: X

INHALATION Nuisance dust. May cause sneezing and coughing.

ACUTE LC₅₀ Not applicable.

EFFECTS OF OVEREXPOSURE

ACUTE OVEREXPOSURE/METHOD OF EXPOSURE/SYMPTOMS

Eyes - Irritation.

Skin - No effects on intact skin.

Ingestion - nausea, vomiting, diarrhea. After 24 hours erythema, macular skin rash, dizziness may occur.

CHRONIC OVEREXPOSURE/METHOD OF EXPOSURE/SYMPTOMS

Eyes - Irritation.

Skin - No effects on intact skin. See ingestion for absorption through damaged skin.

Ingestion - Chronic nausea, diarrhea, ataxia, tremors in animals.
No human experience.

OSHA Permissible Exposure LIMIT (PEL) None Listed

29CFR §1910 Subpart Z

ACGIH Recommended Threshold Limit Value 1 mg/m³
No data base.

National Toxicology Program Annual Report on Carcinogens

Year 1983

Listed

Not Listed X

International Agency for Research on Cancer (IARC)

Monograph Yes

No X

OSHA CARCINOGEN NO

EMERGENCY AND FIRST AID PROCEDURES:

EYES Flush with tepid water for 15 minutes. Consult physician.

SKIN Flush with water. Contact with damaged skin - drink large amounts of water or milk.

INHALATION Remove to fresh air.

(CONT PAGE 4)

ÈMERGENCY AND FIRST AID PROCEDURES: 🛼

CONT. FROM PAGE 3)

INGESTION

Induce emesis. Drink large amounts of water or milk. Consult physician.

NOTE TO PHYSICIAN

Gastric lavage with 5% sodium bicarbonate suggested. Force fluids. Saline catharsis. Ringers solution or normal saline intravenously. See page 6.

SECTION V — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) None

FLAMMABLE LIMITS

Lel Uel

EXTINGUISHING MEDIA None Required. Product is inherent fire retardant.

SPECIAL FIREFIGHTING PROCEDURES None

UNUSUAL FIRE AND EXPLOSION HAZARDS None

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE X

INCOMPATABILITY (materials to avoid) Elemental Zirconium

HAZARDOUS DECOMPOSITION PRODUCTS None

HAZARDOUS POLYMERIZATION

MAY OCCUR

WILL NOT OCCUR X

CONDITIONS TO AVOID Contact with elemental zirconium.

SECTION VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep or vacuum followed by water rinse.

WASTE DISPOSAL METHOD

Solid waste disposal. Sanitary sewer for small amounts.

SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) Nuisance Dust Mask

VENTILATION

LOCAL EXHAUST X

SPECIAL

MECHANICAL (General)

OTHER

PROTECTIVE GLOVES Cloth

EYE PROTECTION Dust Goggles

OTHER PROTECTIVE EQUIPMENT None

SECTION IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Dry indoor storage.

OTHER PRECAUTIONS Retain package integrity.

UNITED STATES BORAX & CHEMICAL CORPORATION • 3075 WILSHIRE BLVD., LOS ANGELES, CA 90010

NOTE: Borax 5-mol is not considered an acute poison. After ingestion or absorption into the blood stream of large amounts (15 grams or more) symptoms may appear after 24-72 hours. Borates are readily dissipated through the urine (70% in the first 24 hours). Complimentary blood analysis is available for physicians and emergency rooms. Medical consultation is also available.

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H-1 F-0 R-1

DBC-0760

G.L.P. MAY 7 '86

•		99 - C			DBC OIPO		
Section I				•	•		
PRODUCT NAME OR NUMBER			·		EMERGENCY TELE		MBER
Burnt Lime - Quick	11me				(606) 472	-7721	
MANUFACTURING FACILITY, COM	PANY OR SU	BSIDIARY					
Black River Lime Co		•		•			
ADDRESS INUMBER, STREET, STA	TE AND ZIP	CODE	-		•		
P.O. Box #1, Butle	r, KY 4	1006			<u>-</u> •		
DOT HAZARDOUS MATERIAL PROP	PER SHIPPIN	G NAME (49 CFR 172	.101)		DOT HAZARD CLASS (49	CFR 172.1	01)
Calcium Oxide					ORM-B		
CHEMICAL FAMILY	-1 ovido	B Not App			UN 1910). (49 CFR	172.10
Alkaline-Earth meta	al oxide	8 NOT APP	IICaui	e (N/A/	011 1310		
					•		
Section II CHEMICAL (COMPONE	NTS	•		C.A.S. NUMBER	- 7	٤
Calcium oxide					1305-78-8	9	6.7
Magnesium oxid	<u> </u>				1309-48-4		3.3
		•		· · · · · · · · · · · · · · · · · · ·			-
				· · · · · · · · · · · · · · · · · · ·		ļ	
						 	
		····					
		·				<u> </u>	
· ·						-	
						1	
			 -	·	<u> </u>	<u> </u>	
Section III PHYSICAL D	ATA						-
Boiling Point	1	Solubility in Water @	10°C	0.13g/100	OgEvaporative Rate (Ethyl e	ther = 1)	N/A
Vapor Pressure mm Hg @ 20° C		Specific Gravity (H.,		3.3-3.4	pH =		N/A
· · · · · · · · · · · · · · · · · · ·	1			N/A	Pit 2		
Vapor Density (Air = 1) APPEARANCE AND ODOR		Percent Volatile by			1		
· (yarosc	obic soli	d, earthy odor		
<u> </u>	/-	·					
	<i>(</i>	<u>.</u>					
CLOSED CUP FLASH POINT F	XPLOSION	HAZARD DAT	A No	t Applical	DIE TEMPERATURE F	· · ·	
<u> </u>		LEL %	UEL	%	ON TEMPERATURE F		·
EXTINGUISHING MEDIA	•	· · ·					
•					•		
SPECIAL FIRE FIGHTING PROCEDU	IRES		<u> </u>				
SPECIAL FIRE FIGHTING PROCEDU	JRES						



DBC 0880

... A KDI Company 4600 Dues Drive P.O. Box 46130 Cincinnati, Ohio 45246 (513)874-9261

1. 0 R. 1 Pp. C

Material Safety Data Sheet

I PRODUCT IDENTIFICATION					
MANUFACTURERS NAME Herbert-Verkamp-Calvert Chemical Co.	REGULAR TELEPHONE NO. 513-874-9261 513-874-9261				
ADDRESS 4600 Dues Drive Cincinnati, OH 45	246				
TRADE NAME Sodium Hypochlorite 12½%			CAS. 7681-52-9		
Soda Bleach, Liquid Bleach, Bleach					
II HAZARDOUS INGREDIENTS					
MATERIAL OR COMPONENT	. %	HAZARD DA	NTA .		
Hypochlorite, Sodium	12.5				
	·				
	-				
		÷			
III PHYSICAL DATA		•	•		
Approx. 220° F	MELTING PO	١.	FREEZING POINT 15° F		
SPECIFIC GRAVITY (H ₁ O=1) 1.220	1	letermine	•		
VAPOR DENSITY (AIR=1) Not determined	Compl				
*volatiles by volApprox. 10%		than one	L ACETATE-1) e	:	
APPEARANCE AND ODOR Yellow liquid with characteristic	odor				
12.5					

IMPORTANT: The Herbert-Verkamp-Calvert Chemical Company warrants that this product conforms to the Chemical Description and/or Product Description contained in this Data Sneet it shall be the exclusive responsibility of the user to determine the safety, toxicity and/or suitability of this product for its own use. The HERBERT-VERKAMP-CALVERT CHEMICAL COMPANY MAKES NO OTHER WARRANTY, WHETHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. In addition, The Herbert-Verkamp-Calvert Chemical Company does not warrant, nor should the user construe, the information contained nerein to be absolutely complete. Additional information may be necessary or required when perficular or exceptional conditions exist. No statements or recommendations contained herein are to be construed as inducements to infringe any relevant patent, now or nerealizer mexistence. The Herbert-Verkamp-Calvert Chemical Company neither assumes nor authorizes any representative or other person to assume for it any objection or liability oner than such as its expressly set forth herein, UNDER NO CIRCUMSTANCES SHALL THE HERBERT-VERKAMP-CALVERT CHEMICAL COMPANY BE LIABLE FOR INCIDENTS.

CONSEQUENTIAL OR OTHER DAMAGES FROM ALLEGED NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY, ARISING OUT OF THE USE OR

IV FIRE AND EXPLOSION DATA									
FLASH POINT (TEST METHOD)		AUTOIGNITION TEMPERATURE							
Nonflammable	•	N.A.							
FLAMMABLE LIMITS IN AIR, % BY VOL.	LOV	YER	UPPER						
N.A.	·								
EXTINGUISHING MEDIA Use extinguishing media as	appropriate fo	r the surrounding i	fire.						
SPECIAL FIRE FIGHTING PROCEDURES Wear self-contained breath spray to keep containers c	ing apparatus a	nd full protective	clothing. Use water						
UNUSUAL FIRE AND EXPLOSION HAZARD Exposure to heat will incr gas is an oxidizer and wil	ease decomposit l support combu	ion of product into	o chlorine gas. Chlorine						
V HEALTH HAZARD INFORMATION	•								
HEALTH HAZARD DATA Information below is based	on information	from the published	i data.						
This material is a corrosi									
SKIN CONTACT	Product may cause irritation or burns on contact. Burns may not be immediately apparent. SKIN ABSORPTION								
EYE CONTACT Will cause severe irritati blindness. INGESTION Will cause irritation or b		·							
EFFECTS OF OVEREXPOSURE Of e sophagu	lude circulator s and stomach.	y collapse, deliri	may cause nausea and me, coma, possible perforati						
Severe irritation or burns	to tissues con	tacted. May cause	permanent injury to eyes						
Irritation or burns with co		t as a sensitizer.							
EMERGENCY AND FIRST AID PROCEDURES EYES: Immediately flush with attention immediately.		•							
skin: Flush with plenty of we persists or burns occur, go	ater while removet medical atte	ving contaminated ontion.	lothing. If irriation						
attention immediately.			necessary. Get medical						
NGESTION: If conscious give so vomiting. Get medical atte	several glasses ention at once.	of milk, or egg wh	ites. Do not induce						
NOTES TO PHYSICIAN:									

VI REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY

Under normal usage, product is stable. Do not expose to direct sunlight or high temperatures.

INCOMPATIBILITY

Acids, ammonium products, organic materials or reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Chlorine gas

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION

None ·

VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Small spills - absorb spill on inert absorbent and place in a closed container. Large spills - stop leaks. Contain spill. Recover as much as possible for reuse. Remaining material should be neutralized with sodium metabisulfite for chlorine removal then with dilute acid to acceptable pH. Do not discharge to sewers or waterways without proper treatment.

NEUTRALIZING CHEMICALS

Absorbent - i.e. Hazorb, clay.

WASTE DISPOSAL METHOD

Follow all Local, State and Federal laws and regulations. Wastes resulting from this product may be regulated under RCRA.

VIII INDUSTRIAL HYGIENE CONTROL MEASURES

VENTILATION REQUIREMENTS

Sufficient general or local exhaust to control any mist or aerosols if present.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY (SPECIFY IN DETAIL)
Use a NIOSH approved respirator for mists if necessary.

EYE

Chemical splash goggles.

GLOVES

Rubber

OTHER CLOTHING AND EQUIPMENT

Rubber apron. Note: The above recommended personal protective equipment is the minimum protection for handling this product. Additional protection may be advisable depending upon conditions of use.

IX SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS

Do not get in eyes or on skin and clothing.

Do not take internally.

Do not breathe mist.

Always wear recommended protective clothing.

Keep containers closed when not in use.

Do not expose container to heat.

Do not mix with any acids, reducing agents or ammonium compounds as chlorine gas may be envolved.

Do not contaminate with combustible materials, bleach is an oxidizer and initiates combustion.

Do not change closures on containers. Containers are shipped with vented closures to avoid pressure build up.

Empty drums may contain product residue, continue to observe all safety and handling precautions.

Do not reuse empty containers without proper reconditioning.

Clean up spills as they occur.

Do not allow material to contaminate sewers or waterways without neutralization other handling and storage requirements

This product is an EPA registered pesticide, follow all label directions.

DEPARTMENT OF TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:

Hypochlorite Solution

HAZARD CLASS:

Corrosive

UN1791

DATE:

PREPARED BY:
Allan T. Cowie

3-20-85

```
POTESSIUM PERMANGANATE REVISION OF: 02/14/86
 HOKESSON CHEMICAL COMPANY ONE POST STREET SAN FRANCISCO, CA 94164
               EYERGERCY ASSISTANCE----
      FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL CHEMIREC
                         (800) 424-9300,
        FOR PRODUCT AND SALES INFORMATION------
       CONTACT YOUR LOCAL MCKESSON CHEMICAL COMPANY SERVICE CERTER
               ----FRODUCT IDENTIFICATION----
FREEDER RABE
             POTASSIUM PERMANGANATE
                                           CAS ROL: 7722-5447
COMMON MAMES/CYNONYMOS: PERMANGANATE OF MCKESSON CODE: T1436
POTASH: CHAMELEON MINERAL CAIROX (R)
(R) IS TRADEMARK OF CARUS CHEMICAL CO.
FORMULA Y MN 04
                                       DATE ISSUED: 02/26
利益医查检证 CATENC (MEPA 704)
                                       SUPERCEDES: 14785
   HEALTH: 3
                                       HAZARD RATING SCALE:
   FIRE: 0
                                       Ø=MINIMAL 3=SERIOUS
   REACTIVITY: 1 -
                                       1=SLIGHT
                                                 4×SEVERE
   SPECIAL: CXY
                                       2#MODERATE
                ----HAZAEDOUS INGREDIENTS-----
                          EXPOSURE LIMITS, MG/M3
                           OSHA ACGIN OTHER
        COMPONENT
                        X PEL TLV LIMIT
                                                 HAZARD
 POTAINIUM PERMANGANATE 28 ROME 5(MN) NONE
                                                  OXIDIZER
       PHYSICAL PROPERTIES----
ROBLING POINT, DEG FY N/A VAPOR PRESSURE, HM HG/20 DEG C: N/A
RELITING FOIRT, DEG F: 302 (DEC.)

APRILIFIC GRAVITY (WATER=1): 2.7

VAPOR DEMSITY (GIR#1): N/A

UATER SOLUBBILITY, X: A.5
ALPEARARES ART COOR. DARK EVARORATION PATE (BUTYL ADETATE#1): N/A
H HEZPHARTLE CRYSTALS: ODGRLESS
                -----FIRST AID NEASURES----
```

McKESSON CHEMICAL COMPANY 3025 EXON AVENUE CINCINNATI, OHIO 45241

Dubria Chemical

HORASSIUM PERMANGANATE

- REVISTON OF: 02/14/86

OF THUBLED: DEBOYE TO FREND OID. GIVE ORTIFICIAL RESPIRATION IF DOT PRESTHESS. DET 1888EDIATE MEDICAL ATTENTION.

IN CASE OF EVE CONTACT: IMMEDIATELY FLUSH EYES WITH LOTS OF RUNNING MATER FOR IS MINUTES, LIFTING THE UPPER AND LOWER EYELIDS OCCASIONALLY GET IMMEDIATE MEDICAL ATTENTION.

TH CASE OF SKIP CONTACT: INMEDIATELY WASH SKIN WITH LOYF OF SOAP AND WATER. REMOVE CONTANTWATED CLOTHING AND SPOES: WASH PEFCRE REUSE. SET MEDICAL ATTENTION IF IRRITATION PERSISTS AFTER WASHING

IF SWALLOWED: DO NOT INDUCE VOWITING. IF CONSCIOUS, GIVE LEMON OR ORANGE JUICE, HILK OR SUGAR SCLUTION: IF NONE OF THESE ARE AVAILABLE. GIVE LARGE CUARTITIES OF WATER. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY NOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

FRIMARY ROUTES OF EXPOSURE: INHALATION

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION. PROLONGED INHALATION OF DUSTS CAN LEAD TO MANGAMESE FOLSOWING RESUlting in Possible Perhanent Disability. Exposures to Heavy Concentrations of Dusts or Fumes for as Little as 3 months may produce Poisoning. But usually cases develop after 1-3 years of Exposure. The ons is the Chief Site of Damage. Initial symptoms are Languer and Sleepingss. Weakness in the legs. Development of Stolid. Mask-like faces and speech in a monotone voice. Then muscle twitchings and tremors. Recturnal leg cramps. And a typical parkinsonian slapping call may appear. These systems may stimulate progressive bulbar paralysis. Builtiple sclerosis. Anyotrophic lateral sclerosis and frogressive Lenticular Degeneration. The Blood Nay Show increased exytheodyte formation and increased oshotic fragility. If cases are enjoyed immediately after appearance of initial symptoms, some improveded in the patient's condition usually occurs, though there may be also besidual disturbances in Gait and Speech.

FIRE CONTACT: TUSTS HAY IRRITATE THE EYES.

SKIR COMPOSET: DUSTE HILL INRITATE THE SKIN.

POISTITUD DEFINANCIMENTS . REVISION OF PROJECTS

PALLOWED: SUALLOWIDE THE BUSTS OR SOLIDS MAY COLOR GASTRO INTESTI-THAT IRRITATION AND RESULTING ABDOMINAL PAIN, DIARRHEA, MAUSEA AND VORTTENG.

THROWER EFFECTS OF EXPOSURE: IMDIVIDUALS EXPOSED TO CUR. AND FUMER OF MANGAGERE HAVE BEEN REPORTED TO SUFFER A MUCH HIGHER INCIDENCE OF UPTER POLICIONO ORY INFECTIONS AND PREUROMIA THAN THE GENERAL POPULATION.

PRINTED CONTROL FORS SITUESALLY AGGRAVATED BY EXPERIENCE ROME KNOWN

TOXICITY DATA

(1)含矿层 (三) 胶色等 (上) 斯蒂斯 (m) (m) (n) (n) (n) (n)

DEPUAL OF BATA FORMER

TINGALATION: NO DATA FOUND

CARCINOSENICITY. THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM: THE INTERNATIONAL AGENCY FOR POTENCH ON CAPCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PIHER DOTG: EXPERIMENTS DITH MICE HOVE PRODUCED DEFINITE AND STRIKING LING MATHOLOGY WHICH PARLET IN INTEWSITY WITH LENGTH OF EXPOSURE TO OHET .

----PERSONAL PROTECTION-

MERTINATION - LOSSAL MENTANTEAR EXHAUST MERTILATION CARACLE OF MINIBERS FOR PULL THESE STATES AT THE POTAT OF USE.

RE PERSTORY PROTECTION - NIOSH-APPROVED DUST RESPIRATOR OR MASK.

FYE PROFECTION: CHEMICAL GOODLES AND FULL FACE SHIELD

PROTECTATE CLOTHING: LCNI-SLEEVED SHIRT, TROUSERS, SAFETY SHOES, RUBBER SLOVES, AND PUBBER APROR.

OTHER PROTECTIVE MEASURES: AN EYEWASH AND SAFETY SHOWER SHOULD BE HEARDY AND READY FOR USE.

-----FIRE AND EXFLOSION INFORMATION-------

REVISION OF: 02/19/84

SLASH FGIMT, DEG F: N/A METHOD USED: N/A

FLAMMABLE LIMITS IN AIR, T LOWER: N/A UPPER: N/A

THINGSERHING MEDIA: FLOOD WITH DATER

SPECIAL FIRE FIGHTING PROCEDURES: FIRE FIGHTERS SHOULD WEAR SELF-CONTAINED DREATHING APPARATUS. USE WATER SPRAY TO COOL NEARBY CONTAINERS AND STRUCTURES EXPOSED TO FIRE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: MAY DECOMPOSE SPONTANEOUSLY (DRY OR IN SOLUTION) IF EXPOSED TO MEAT. ACIDS. HYDROGEN PEROXIDE. REDUCING AGENTS OR ORGANICS. IN CONFINED AREAS THIS DECOMPOSITION MAY BECOME EXPLOSIVE.

STABILITY STABLE POLYMERIZATION: WILL NOT GCCUR COMDITIONS TO AVOID: EXCESSIVE HEAT (>300 DEG F/150 DEG C) AND CONTAMINATION OF LANY KIND.

MATERIALS TO AVOID: ACIDS, ALCOHOLS, ARSENITES, TODEDER PEROXIDES, CXALOTES, REDUCING AGERTS, COMBUSTIBLE MATERIALS SUCH AS WOOD, CLOTH, OR ORGANIC MATERIALS, METALS SUCH AS TRON AND COPPER AND THEIR ALLOYS, AND ANY OTHER CXIDIZABLE MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS: WITH CONTACT WITH HOL LIBERATES OFFICERINE, OTHERWISE LIBERATES OXYGEN- A FIREZEXPLOSION HAZARD.

SPILL, LEAK, AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS OR LEAKS: WEAR PROTECTIVE EQUIPMENT INCLUDING EUDEER BOOTS, RUBBER GLOVES, RUBBER APRON, RESPIRATORY PROTECTION AND CHEMICAL GOGGLES, FOR SMALL SPILLS, SWEEP UP AND DISPOSE OF IN DOTAPPROVED WASTE CONTAINERS, FOR LARGE SPILLS, SHOVEL INTO DOT-APPROVED WASTE CONTAINERS, COMPLY WITH ALL APPLICABLE GOVERNMENTAL REGULATIONS OF SPILL REPORTING, AND HANDLING AND DISPOSAL OF WASTE.

DISPOSAL METHODS: DISPOSE OF CONTAMINATED PRODUCT AND MATERIALS USED IN CLEANING UP SPILLS OR LEAKS IN A MANNER APPROVED FOR THIS MATERIAL. CONSULT APPROPRIATE FEDERAL. STATE AND LOCAL REQULATORY AGENCIES TO ASCEPTABLE PROPER DISPOSAL PROCEDURES.

NOTE: EMPTY CONTAINERS CAN MAYE RESIDUES. GASES AND MISTS AND ARE

POTASSIUM PERMANSANATE

REVISION OF: 02/14/86

SUBJECT TO PROPER WASTE DISPOSAL. AS ABOVE,

-----SPECIAL PRECAUTIONS-----

ETCROSE OND HONDLING PRECOUTIONS: STORE IR A WELL-MURTHLATER, JOHN DRY THEACE. STORE AMAY FROM ALL OTHER CHEMICALS AND POTERTIAL SOCROES OF TORTOMEROTEDRY KEER CONTAINER TIGHTLY CLOSED WHEN BUT IN HAR. MASH PROPOUGHLY AFTER HANDLING. DO NOT GET IN EYES, OF SKIN, OR OM THE CHINE

REPAIR AND MAINTENANCE PRECAUTIONS: NOME.

OTHER PRECAUTIONS. CONTAINERS, EVEN THOSE THAT HAVE FREE SMPTIED, WILL RETAIN PRODUCT RESIDUE. ALWAYS OBEY HAZARD WARNINGS AND HANDLE EMPTY CONTAINERS AS IF THEY WERE FULL.

----FOR ADDITIONAL INFORMATION----

CONTACT DOUGLAS EIGNER. TECHNICAL DIRECTOR, MCKESSON (MEMICAL COMPANY DURING BUSINESS HOURS, PACIFIC TIME (415) 983-9914

ALL INFORMATION, RECOMMENDATIONS, AND SUGGESTIONS APPRAISING HEREIN! CONCERNING THIS PRODUCT ARE BASED UPON DATA OBTAINED FROM THE MANDFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES: HOWEVER: MCKESSON CHEMICAL COMPANY ("MCC") MAKES NO WARRANTY, REPRESENTATION OR GUARANTY AS TO THE ACCURACY, SUFFICIENCY OR COMPLETENESS OF THE NATERIAL SET FORTH HEREIN. IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SAFETY, TOXICITY AND SUITABILITY OF HIS OWN USE, MANDLING AND DISPOSAL OF THE PRODUCT. ADDITIONAL PRODUCT LITERATURE MAY BE AVAILABLE UPON REQUEST. CIPCE ACTUAL USE BY OTHERS IS BEYOND OUR CONTROL. NO WARRANTY, EXPRESS OR THPLIED LIS HADE BY HIC AS TO THE EFFECTS OF SUCH USE. THE RESULTS TO PELODIAINED OR THE SAFETY AND TOXICITY OF THE PRODUCT, NOR DOES NOC ASSUME ONY LIABILITY ARISING OUT OF USE BY OTHERS OF THE PRODUCT. REFERRED TO HEREIA. THE DATA IN THIS MEDS RELATE ONLY TO THE SPECIFIC SATERIAL DESIGNATED MEREIN AND DO NOT RELATE TO USE IN COMPINATION WITH ANY OTHER MATERIAL OR IN ANY PROCESS. . .

92/86: REVISED FIRST AID MEASURES.



(SODIUM BICHROMATE)

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME)	4 - V	Z C.A.S. N	IO. 🔲 ALLIED	PRODUCT CODE =
SODIUM DICHROMATE, Fine Crystal, Reagent	r.0		7789-12-0 (dihydrate)
SODIUM BICHROMATE (various grades)	R-1		10588-01-9	(anhydrous)
CHEMICAL NAME AND/OR SYNONYM	<i>ρρ-</i> ⊂			
Sodium Dichromate, dihydrate. Synonym: Sodium bichron	mate, dihydrate (also exist	in anhydi	rous form)	
FORMULA			MOLECULAR WE	IGHT
Na ₂ Cr ₂ O ₇ · 2H ₂ O	A			298.00
ADDRESS (No., STREET, CITY, STATE ALLIED CORPORATION	AND ZIP CODE			
CHEMICAL SECTOR	,	. •		
P.O. Box 1139R			•	
Morristown, N.J. 07960			,	
CONTACT	PHONE NUMBER	LAST	SSUE DATE	CURRENT ISSUE DATE
Director, Product Safety	(201) 455-4157	Jan	., 1982/1983	Nov., 1984

BE FIRST AID MEASURES

Skin: Wash with soap and flush with plenty of water without delay. After washing as directed,

EMERGENCY PHONE NUMBER

(201) 455-2000

a 10% solution of ascorbic acid can be a useful antidote for burns from chromic acid or hot

chromate solutions. The ascorbic acid solution should be applied as a wet compress to the burned area. Remove contaminated clothing and wash before reuse.

Eyes: Promptly flush with plenty of water, continuing for at least 15 minutes and get medical attention.

Ingestion: If conscious, immediately have victim drink water, and induce vomiting by touching back of throat with finger. An emetic, such as syrup of ipecac, may be used, if available, followed by more water or mucilaginous drinks.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen if qualified operator is available.

Get medical attention for ingestion, inhalation, irritation, chemical or thermal burns or "chrome sores".

C. HAZAROS INFORMATION

HEALTH

INHALATION

Inhalation of bichromate dusts or mists can cause ulceration and perforation of the nasal septum, as well as irritation to the respiratory system. Overexposure to hexavalent chromium may cause lung cancer-risk. See Section K.

INGESTION

Can be harmful or fatal. Toxic effects may not appear right away. A systemic poison; bichromates are primarily toxic to the kidneys, liver and gastro-intestinal tract. LD50 (rat): 105 mg/kg. Reference (e).

SKIN

Dusts and solutions can cause irritation. Contact with breaks in the skin can cause "chrome sores" (skin ulcers). Bichromates are skin sensitizers. Skin absorption has been reported. Also, see Section K.

EYES

Dusts, mists, or solutions can cause severe irritation and conjunctivitis.

PERMISSIBLE CONCENTRATION: AIR (SEE SECTION J) $TLV = 0.05 \text{ mg/m}^3 \text{ (as Cr)}$

OSHA TWA = 0.1 mg/m^3 (as CrO_3) (Ceiling)

BIOLOGICAL

Action Level: 40-50 microgram (Cr)/

liter in urine (sampled at end of day)

UNUSUAL CHRONIC TOXICITY

See Section K.

G.L.P., MY 12 125

C多 HAZARDS (Cont.)

FIRE AND EXPLOSION

		••		
FLASH POINT	°C	AUTO IGNITION	°C	FLAMMABLE LIMITS IN AIR (% BY VOL.)
Not Flammable		TEMPERATURE	J	

Not Flammable

NA-Not Applicable

NA-Not Applicable

NA-Not Applicable

JUSUAL FIRE AND EXPLOSION HAZARDS

Decomposes at about 400°C (750°F) to release oxygen, which may promote the burning of combustibles. An oxidizer-may react rapidly enough to ignite some materials, and with finely divided combustibles, the combustion can be violent.

DE PREGAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

Small fire: dry chemical, CO₂ or water spray.

Large fire: water spray (may require flooding amounts)

FIRE EXTINGUISHING AGENTS TO AVOID

None known

SPECIAL FIRE FIGHTING PRECAUTIONS

Water runoff may contain hexavalent chromium and should not be allowed to enter sewers or waterways. Use NIOSH-approved self-contained breathing apparatus and full protective clothing if exposure to chromium dust or mist is possible. Cool fire-exposed containers with water spray.

VENTILATION

Sufficient to reduce chromium concentration below current permissible levels. Packing and unloading areas and open processing equipment should be equipped with mechanical exhaust systems.

NORMAL HANDLING

Avoid contact with skin, eyes or clothing. Avoid breathing dust or mist from solutions. Wash thoroughly after handling and use good personal hygiene and good housekeeping. Handle carefully in a manner that minimizes dusting and splashes.

STORAGE

store in dry, well-ventilated area in suitable tightly closed containers. Avoid wooden floors and contact with reducing agents.

SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT - SECTION E)

Shovel up dry chemical and place in an empty metal drum with a cover. Do not return to original container. Cautiously spray residue with plenty of water. Recover resulting solution or slurry for proper disposal. (See Section I for disposal methods.) Keep out of sewer. Any release of the product to the environment may be subject to Federal or state reporting requirements. Check with appropriate agencies.

SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

SIGNAL WORD - DANGER!

UPPER-

Wear clean clothing daily. If clothing becomes contaminated, clean clothing should be obtained immediately. Workers exposed to chromium chemicals should avoid leather shoes and gloves as they can become impregnated with the material.

EN PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Where required, use NIOSH-approved high-efficiency dust respirator, or high-efficiency dust and mist respirator, as applicable. For some exposures, a NIOSH-approved self-contained breathing apparatus or supplied-air respirator may be necessary. See references (a), (d).

EYES AND FACE

Wear hard hat (or other head covering) and chemical safety goggles. Do not wear contact lenses. For increased protection, include full-face plastic shield.

HANDS, ARMS, AND BODY

Wear rubber apron, boots and gloves, and long-sleeve shirt and trousers for routine product use. Head and neck should be covered. Sontaminated clothing should not be laundered at home. Take hot shower after work, using plenty of soap.

OTHER CLOTHING AND EQUIPMENT

Workers exposed to concentrated solutions may require more complete protection than indicated above. Provide eyewash and quick-drench shower facilities.

	APPEARANCE AND ODOR		
□LIQUID Ø SOLID □ GA	AS Reddish to bright orange crystals. C	dorless. Deliquescent.	
, , , , , , , , , , , , , , , , , , ,			
	SPECIFIC GRAVITY	VAPOR DENSITY	
BOILING POINT	°C (H ₂ O = 1) 85°C 2.35	(AIR = 1)	
The dihydrate dehydrates @	(the dihydrate)	NA NA	
MELTING POINT (anhydrous)	357°C		
SOLUBILITY IN WATER	1% solution: pH = 4.0	VAPOR PRESSURE (mm Hg at 20° C) ☐ (PSI	G) 🗆
(% by Weight)		(F3)	G, [
72% solution at 10°C	10% solution: pH = 3.5	NA	
(dihydrate basis)	(dihydrate basis)	1	
EVAPORATION RATE (Butyl Acetate = 1) (Ether = 1)	% VOLATILES BY VOLUME		
NA			
NA .	NA A		
G. REACTIVITY DATA			
STABILITY	CONDITIONS TO AVOID		
UNSTABLE X STABLE	High temperatures: Decomposes at a fire and reactivity hazard.	High temperatures: Decomposes at about 400°C to yield oxygen which poses a fire and reactivity hazard.	
HAZARDOUS DECOMPOSITION PRODUCTS			
Decomposes at high temperatures (app	prox. 400°C) to yield oxygen, sodium chroma	e and chromic oxide (Cr ⁺³).	
	CONDITIONS TO AVOID	e and chromic oxide (Cr ⁺³).	
Decomposes at high temperatures (app	CONDITIONS TO AVOID	re and chromic oxide (Cr ⁺³).	
Decomposes at high temperatures (app	CONDITIONS TO AVOID Not pertinent	e and chromic oxide (Cr ⁺³).	
Decomposes at high temperatures (approximation) MAY OCCUR	CONDITIONS TO AVOID Not pertinent	e and chromic oxide (Cr+3). WT. % HAZARD DATA (SEE	SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Lixtures Only)*		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.
Decomposes at high temperatures (approximaterial or	CONDITIONS TO AVOID Not pertinent Intuitives; Only)* COMPONENT/C.A.S. *		SECT.

1. SEENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY Aquatic toxicity:	OCTANOL/WATER PARTITION Unkn	
5ppm/24 hr/bluegill/TL _m /fresh water. [see reference (f)]		
EPA HAZARDOUS SUBSTANCE? X	ry: 1000 #	40 CFR 116-117
WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STA Hexavalent chromium cannot be discharged directly to waterways methods are outlined in literature available from Allied Corporation, chemical wastes landfill may be necessary. Empty bags should also be chemical wastes landfill.	. Disposal method may depend on Chemical Sector. Disposal by a cont	regulations. Treatment tractor or in an approved
RCRA STATUS OF <u>UNUSED</u> MATERIAL IF DISCARDED: EPA Hazardous Waste.	HAZARDOUS WASTE NUMBER: (IF A	

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

NIOSH Registry (RTECS), 1981-82, Accession No. HX7750000.

OSHA standard, 29 CFR 1910 (1982) "Z List"

TLV from the 1984-85 ACGIH list, "Threshold Limit Values for Chemical Substances . . ."

製造 数 新 二 二 和 [編] [2

Biological Action Level: Baselt, R.C., "Biological Monitoring Methods for Industrial Chemicals", 1980, Biomedical Publications, Davis, CA 95616.

REGULATORY STANDARDS

D.O.T. CLASSIFICATION:

ORM-A

49 CFR

D.O.T. Hazardous Materials Table: 49 CFR 172.101

I.D. No.: NA 1479

ERAL

- (a) Criteria for a Recommended Standard... Occupational Exposure to Chromium (VI). Published by NIOSH
- (U.S. Dept. of HHS), 1975., PB 248595, NTIS.
- (b) Petrilli, F.L. et al, <u>Appl. Environ, Microbiol. 1977</u>, 33 (4), 805-9 (Eng).
- (c) Newbold, R.F. et al, Mutat, Res. 1979, 67 (1), 55-63 (Eng).
- (d) N1OSH/OSHA "Occupational Health Guideline for Chromic Acid and Chromates," 1978.
- (e) Allied Corp. test data, unpublished.
- (f) CHRIS Manual, U.S. Coast Guard, Sodium Dichromate.
- (g) IARC Monograph, Suppl. 4, 1982: "Chromium and Certain Chromium Compounds"

K ADDITIONAL INFORMATION

For manufacturing use only. Not for food or drug use.

Absorption through broken, burned, or intact skin can cause systemic poisoning affecting kidney and liver functions, which can be fatal. Chronic exposure can also cause such poisoning. Recent studies indicate a significant risk of lung cancer among long-term employees of the chromate-producing industry. Furthermore, on the basis of tests with laboratory animals, investigative results suggest that all chromium (VI) compounds be treated as suspect carcinogens which may pose a lung cancer-risk through overexposure. Good practice dictates precautions to minimize worker exposure via skin contact and the escape of dust or mist into the air.

IARC Carcinogenicity Evaluation: "Sufficient" (humans and animals). See Reference (g).

Caution should also be observed in operations where this chemical is mixed with other chemicals. Certain chemical mixtures may cause potentially carcinogenic insoluble hexavalent chromium compounds to be formed. See references (a), (d).

Hexavalent chromium compounds in the form of chromates and dichromates have been found to be mutagenic in bacterial and mammalian cells, including those of the Chinese hamster.

-References (b) and (c).

Information (hazards, precautions, first aid, etc.) is abbreviated. More complete information can be found in the general references listed.

PSDS FILE NO. 782

THIS PRODUCT SAFETY DATA SHEET IS OFFERED SOLELY FOR YOUR INFORMATION. CONSIDERATION AND

ALLIED CORPORATION PROVIDES NO WARRANTIES ELTHERIEXPRESS OF IMPLIED AND ASSUMES NO RESPONSIBILITY

Allied: Chemical: Ar ALLED Company

SODIUM CHROMATE

≮PRÖDUCT SAFET ∼DATA SHEET - ₽

ALE: GENERALSINFORMATIONS	F · 0				
TRADE NAME (COMMON NAME OR SYNONYM)	PP-C		X C.A.S. NO. ☐ ALL	LIED PRODUCT CODE #	
SODIUM CHROMATE			7775-11-3		
CHEMICAL NAME			1		
Sodium Chromate, anhydrous and tetrahydrate	<i>j</i>				
FORMULA			MOLECULA	R WEIGHT	
anhydrous: Na ₂ CrO ₄		\mathcal{A}		161.97	
tetrahydrate: Na ₂ CrO ₄ · 4H ₂ O		,		234,03	
ADDRESS (No., STREET, CITY,	STATE AND ZIP CODE				_
ALLIED CHEMICAL			••	-	
P.O. Box 1139R	i i		•		
Morristown, N.J. 07960					
CONTACT	PHONE NUME	ER	ISSUED DATE	REVISED DATE	

BE FIRST AID MEASURES

Director, Product Safety

Skin: Wash with plenty of water without delay. Remove contaminated clothing.

EMERGENCY PHONE NUMBER (201) 455-2000

Jan., 1983

June, 1980

Eyes: Promptly flush with plenty of water continuing for at least 15 minutes and get medical

attention.

Ingestion: If conscious, immediately have victim drink water; then induce vomiting by touching finger to the back of the throat.

(201) 455-4157

Get prompt medical attention for ingestion, inhalation, irritation, chemical or thermal burns, or "chrome sores".

C. HAZARDS INFORMATION

HEALTH

Inhalation of chromate dusts or mists can cause ulceration and perforation of the nasal septum, as well as irritation and ulceration of the respiratory system. See Section K.

INGESTION

Can be harmful or fatal. Toxic effects may not appear right away. A systemic poison; chromates are primarily toxic to the kidneys, liver, and gastrointestinal tract.

SKIN

Dusts and solutions can cause irritation. Contact with breaks in the skin can cause "chrome sores" (skin ulcers). Chromates are skin sensitizers. Skin absorption has been reported. See further, Section K.

EYES

Dusts, mists, or solutions can cause severe irritation and conjunctivitis.

PERMISSIBLE CONCENTRATION: AIR
(SEE SECTION J)

OSHA TWA 0.1 mg/m³ (as CrO₃)

BIOLOGICAL

TLV = 0.1 mg/m^3 (as Cr)

40-50 microgram (Cr)/liter in urine (sampled at end of day).

UNUSUAL CHRONIC TOXICITY

See Section K.

3.L.P. #1 12 83

CASHAZARDS (Cont.)

FIRE AND EXPLOSION

THIC MID CALL	. 001014			
FLASH POINT	°C AUTO IGNITION	C FLAMMABLE LIM	IITS IN AIR (% BY VOL.)	
Not Flammable	NA	LOWER	NA	UPPER
DIVUSUAL FIRE AND EXPLO	DSION HAZARDS			
None known,				
!				

D PRECAUTIONS PROCEDURES.

FIRE EXTINGUISHING AGENTS RECOMMENDED

Water spray (may require flooding amounts).

FIRE EXTINGUISHING AGENTS TO AVOID

NA

SPECIAL FIRE FIGHTING PRECAUTIONS

Water runoff may contain hexavalent chromium and should not be allowed to enter sewers or waterways. Use NIOSH-approved self-contained breathing apparatus and full protective clothing if exposure to chromium dust or mist is possible. Cool fire-exposed containers with water spray.

VENTILATION

Sufficient to reduce chromium concentration below current permissible levels. Packaging and unloading areas and open processing equipment should be equipped with mechanical exhaust systems.

NORMAL HANDLING

Avoid contact with skin, eyes or clothing. Avoid breathing dust or mist from solutions. Wash thoroughly after handling and use good personal hygiene and good housekeeping. Handle carefully in a manner that minimizes dusting and splashes.

FAGE

Fre in dry, well-ventilated area in suitable tightly closed containers.

SPILL OR LEAK

Shovel up dry chemical and place in an empty metal drum with a cover. Cautiously spray residue with plenty of water. Recover resulting solution or slurry for proper disposal. (See Section I for disposal methods.) Keep out of sewer. Any release of this product to environment may be subject to Federal or state reporting requirements. Check with appropriate agencies.

SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

Wear clean clothing daily. If clothing becomes contaminated, clean clothing should be obtained immediately. Workers exposed to chromium chemicals should avoid leather shoes and gloves as they can become impregnated with the material. Label signal word: DANGER!

RESPERSONACE PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Where required, use a NIOSH-approved high-efficiency dust respirator, or high-efficiency dust and mist respirator, as applicable. For some exposures, a NIOSH-approved self-contained breathing apparatus or supplied-air respirator may be necessary. See references (a), (d).

EYES AND FACE

Wear hard hat (or other head covering) and chemical safety goggles. Do not wear contact lenses. For increased protection, include full-face plastic shield.

HANDS, ARMS, AND BODY

ar rubber apron, boots and gloves, and long-sleeve shirt and trouser for routine product use. Head and neck should be covered.

Interminated clothing should not be laundered at home.

OTHER CLOTHING AND EQUIPMENT

Workers exposed to concentrated solutions may require more complete protection than indicated above. Provide eyewash and quick-drench shower facilities.

RHASICAL COATAL	Tions	ADDE A DANCE AND	2.0008			
MATERIAL IS (AT NORMAL CONDI	TIONS):	APPEARANCE AND	O O O O O O O O O O O O O O O O O O O			
□ FIONID	☐ GAS	Yellow crystal	s or powder. Oderless.			
BOILING POINT		SPECIFIC GRAVIT	Y		APOR DENSITY AIR = 1)	
Tetrahydrate Dehyd MELTING POINT	rates at 63°C 792 °C	An	hydrons = 2.72			NA
SOLUBILITY IN WATER (% by Weight)		рН	,	(1	APOR PRESSUR mm Hg at 20° C)[E (PSIG)
44% solution at 20°	С	1% solut	tion; pH = 9.0 (approx)		NA .
EVAPORATION RATE (Butyl Acetate = 1) [(Ether = 1) [% VOLATILES BY	VOLUME		•	
NA	:		NA '			
G: REACTIVITY DATA				-		
STABILITY	-	CONDITIONS TO A	VOID			-
☐ UNSTABLE 🏿 STA	BLE	,				
				•		
Reducing agents _						
HAZARDOUS DECOMPOSITION PRO		f 792°C.	·	-		
HAZARDOUS DECOMPOSITION PRO Considered stable up through i			27010			
HAZARDOUS DECOMPOSITION PRO Considered stable up through I HAZARDOUS POLYMERIZATION	melting point of	f 792°C.	AVOID			
HAZARDOUS DECOMPOSITION PRO Considered stable up through I HAZARDOUS POLYMERIZATION			AVOID			
HAZARDOUS DECOMPOSITION PRO Considered stable up through I HAZARDOUS POLYMERIZATION	melting point of	CONDITIONS TO A	AVOID			
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR WILL HAZARDOUS INGREDIA	melting point of	CONDITIONS TO A	AVOID	WT. %	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR WILL HAZARDOUS INGREDIA	melting point of	CONDITIONS TO A		WT. %	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR MAY OCCUR MATE	melting point of	CONDITIONS TO A		WT. %	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR MAY OCCUR MATE	melting point of	CONDITIONS TO A		WT. %	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR MAY OCCUR MATE	melting point of	CONDITIONS TO A		WT.%	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR MAY OCCUR MATE	melting point of	CONDITIONS TO A		WT. %	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR MAY OCCUR MATE	melting point of	CONDITIONS TO A		WT. %	HAZARD D	ATA (SEE SECT. J)
HAZARDOUS DECOMPOSITION PRO Considered stable up through a HAZARDOUS POLYMERIZATION MAY OCCUR MAY OCCUR MATE	melting point of	CONDITIONS TO A		WT. %	HAZARD D	ATA (SEE SECT. J)

ENVIRONMENTA'S				
DEGRADABILITY/AQUATIC TOXICITY Aquatic toxicity:		OCTANOL/WA	TER PARTITION (COEFFICIENT
mg/liter/24 hr/bluegill/TL _m /fresh water 50 ppm/288 hr/shore crab/toxic/salt water				
To pp 200 m/shale clab/toxic/sait water	;ı		•	
YES NO	SO, REPORTABLE QUANTITY:	1000	_ #	40 CFR 116-117
WASTE DISPOSAL METHODS (DISPOSER MUST CO	MPLY WITH FEDERAL, STATE AN	D LOCAL DISPO	SAL OR DISCHAR	GE LAWS)
Hexavalent chromium cannot be discharged methods are outlined in literature available f landfill may be necessary. Empty bags showwastes landfill.	from Allied Chemical. Disposal	by a contracto	or or in an appr	oved chemical wastes
RCRA STATUS OF UNUSED MATERIAL: EPA Hazardous Waste No. D007 if discarded.		, ¹	-	40 CFR 261.24
USS REFERENCES)			. •	
	•			
PERMISSIBLE CONCENTRATION REFERENCES				
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982).	Limit Values for Chemical Subs	tances "		_
PERMISSIBLE CONCENTRATION REFERENCES	Limit Values for Chemical Subs	tances"		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982).	Limit Values for Chemical Subs	tances''		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982).	Limit Values for Chemical Subs		: NA 9145	49 CFR
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold L			: NA 9145	49 CFR
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold L			: NA 9145	49 CFR
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold L			NA 9145	49 CFR
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold L REGULATORY STANDARDS	D.O.T. CLASSIFICATION	ON: ORM-E		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold L REGULATORY STANDARDS PAL Criteria for a Recommended Standard	D.O.T. CLASSIFICATION	ON: ORM-E		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold L REGULATORY STANDARDS REGULATORY STANDARDS AL Criteria for a Recommended StandardC HHS), 1975, PB 248595, NTIS. (b) Petrilli, F.L., et al, Appl. Environ. Microbiol.	D.O.T. CLASSIFICATION Descriptional Exposure to Chrom. 1977, 33 (4), 805-9 (Eng.)	ON: ORM-E		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold Land Included the Concentration of t	D.O.T. CLASSIFICATION Occupational Exposure to Chrom 1, 1977, 33 (4), 805-9 (Eng). 11), 55-63 (Eng.). Ine for Chromic Acid and Chrome	ON: ORM-E		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold Land In the standard of the standard o	D.O.T. CLASSIFICATION Occupational Exposure to Chrom 1, 1977, 33 (4), 805-9 (Eng). 11), 55-63 (Eng.). Ine for Chromic Acid and Chrome	ON: ORM-E		
PERMISSIBLE CONCENTRATION REFERENCES OSHA standard, 29 CFR 1910.1000 (1982). TLV from the 1982 ACGIH list, "Threshold Land Included the Concentration of t	D.O.T. CLASSIFICATION Occupational Exposure to Chrom 1, 1977, 33 (4), 805-9 (Eng). 11), 55-63 (Eng.). Ine for Chromic Acid and Chrome	ON: ORM-E		

For manufacturing use only. Not for food or drug use.

Absorption through broken, burned or intact skin can cause systemic poisoning affecting kidney and liver functions, and can be fatal. Chronic exposure can also cause such poisoning.

Recent studies indicate an increased incidence of respiratory cancers amoung long-term employees of the chromate producing industry. The NIOSH criteria document for hexavalent chromium recommends that all chromium (VI) compounds be considered suspect carcinogens except Chromic Acid and its ammonium, sodium, potassium and lithium salts. Nevertheless, some investigators believe that these soluble hexavalent compounds may present a carcinogenic risk under special circumstances. As long as these uncertainties exist, good practice dictates precautions to minimize worker exposure.

Caution should also be observed in operations where this chemical is mixed with other chemicals. Certain chemical mixtures may cause potentially carcinogenic insoluble hexavalent chromium compounds to be formed. See references (a), (d).

Hexavalent chromium compounds in the form of chromates and dichromates have been found to be mutagenic in bacterial and mammalian cells, including those of the Chinese hamster. — References (b) and (c).

Information (hazards, precautions, first aid, etc.) is abbreviated. More complete information can be found in the general references listed.

OCEANSM Network

MATERIAL

SAFETY DATA **EMERGENCY PHONE 1-800-OLIN-911**

R- 1

PP-C

DBC- 1340

SECTION I - IDENTIFICATION

CHEMICAL NAME & SYNONYMS Sodium Silicofluoride: Sodium Fluosilicate: Sodium Hexafluorosilicate FORMULA CHEMICAL FAMILY TRADE NAME Na₂SiF₆ Fluorides SSF DESCRIPTION CAS NO. White crystals or powder 16893-85-9

SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not get in eyes, on skin or on clothing. Do not take internally. Upon contact with skin or eyes, wash off with water. Avoid breathing dust. Store in a cool, dry, well-ventilated place.

PROTECTIVE EQUIPMENT	VENTILATION REQUIREMENTS
EYES Goggles	Local mechanical exhaust ventilation
GLOVES Impervious	recommended to minimize employee exposure
OTHER Coveralis and boots	

SECTION III - HAZARDOUS INGREDIENTS

BASIC MATERIAL	OSHA PEL	LD50	LC50	SIGNIFICANT EFFECTS
Sodium Silicofluoride	2.5 mg/m3	125 mg/kg (rat)	>200 mg/1 1 hr (rat)	Eye, skin, mucous membrane irritation
				ı.
	4		•	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT Not applicable METHOD	OSHA CLASSIFICATION Non-combustible solid	FLAMMABLE LOWER EXPLOSIVE N.D. LIMIT	UPPER N.D.
EXTINGUISHING MEDIA Non-combu	stible - Choose extinguishing media su		,
	GHTING PROCEDURES Use NIOSH/MSHA approis involved in a fire.	ved self-contained bre	athing

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 2.5 mg/m3 as fluoride (ACGIH 1983) SYMPTOMS OF OVER EXPOSURE . Irritation to eyes, skin and mucous membranes, gastrointestinal upset, nosebleed, weakness. EMERGENCY FIRST-AID PROCEDURES KIN Flush with water for 15 minutes, call a physician. EYES Immediately wash with water for 15 minutes, call a physician.

INGESTION Drink water, induce vomiting by sticking finger down throat, call a physician.

TRUM ATTAN - Romovo victim to froch pin

GLP. WH 13 88

- PAGE 1

ALBRIGHT & WILSON INC. MATERIAL SAFETY DATA BULLETIN

ALBRIGHT & WILSON INC. "IRONMENTAL SERVICES P. O. BOX 26229

RICHMOND, VA. 23260-6229 (USA)

####*************** PRODUCT IDENTIFICATION #************ H-0

TETRAPOTASSIUM PYROPHOSPHATE

F-0 R-0

PP-B

1)BC-1420

SUPPLIER:

ALBRIGHT & WILSON INC.

CHEMICAL NAMES AND SYNONYMS:

PYROPHOSPHATE, TETRAPOTASSIUM

USE OR DESCRIPTION:

INDUSTRIAL CHEMICAL

HEALTH EMERGENCY TELEPHONE: (803) 745-5200

TRANSPORT EMERGENCY TELEPHONE:

(800) 424-9300 (CHEMTREC)

/ OTHER DESIGNATION:

******* TYPICAL CHEMICAL AND PHYSICAL PROPERTIES **********

APPEARANCE:

ODOR:

VISCOSITY: AT 100 F, SUS

NE

AT 40 C. CS

LIQUID

VISCOSITY: AT 210 F, SUS

TLV(TWA):

AT 100 C. CS

NE

SOLUBILITY IN WATER:

NE PH:

NE

RELATIVE DENSITY: 15/4 C 1.74

APPRECIABLE

10.0

MELTING POINT: F(C)

NA

POUR POINT: F(C)

NE

BOILING POINT: F(C)

FLASH POINT: F(C) (METHOD)

NE

VAPOR PRESSURE:MM HG 20C

NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

WT PCT (APPROX)

MG/M3

DDM

HAZARDOUS INGREDIENTS:

TETRAPOTASSIUM PYROPHOSPHATE (7320 - 34 - 5)

70

NE

NOTE: TLVS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS.

INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF CHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

0 1 7 Pay 12 765

****** FIRE AND EXPLOSION HAZARD DATA **************

FLAMMABLE LIMITS: LEL

NA

NA

√ ASH POINT: F(C) (METHOD)

EXTINGUISHING MEDIA: NOT APPLICABLE

SPECIAL FIRE FIGHTING PROCEDURES:

FIREFIGHTERS MUST USE RECOMMENDED PROTECTIVE EQUIPMENT. THE MATERIAL WILL NOT BURN.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN

********* EMERGENCY AND FIRST AID PROCEDURES ************* EYE CONTACT:

FLUSH THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES. GET MMEDIATE MEDICAL ASSISTANCE. IF MEDICAL ASSISTANCE IS NOT IMMEDIATELY .ILABLE, FLUSH AN ADDITIONAL 15 MINUTES.

SKIN CONTACT:

WASH CONTACT AREAS WITH SOAP AND WATER.

INHALATION:

REMOVE FROM FURTHER EXPOSURE. IF UNCONSCIOUSNESS OCCURS, SEEK IMMEDIATE MEDICAL ASSISTANCE AND CALL A PHYSICIAN. IF BREATHING HAS STOPPED, USE MOUTH TO MOUTH RESUSCITATION.

INGESTION:

IF SWALLOWED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

STABILITY: (THERMAL, LIGHT, ETC.) CONDITIONS TO AVOID:

STABLE FREEZING TEMPERATURES.

INCOMPATIBILITY: (MATERIALS TO AVOID)

ALUMINUM.

'ARDOUS DECOMPOSITION PRODUCTS:

PHOSPHORUS OXIDES.

HAZARDOUS POLYMERIZATION:

CONDITIONS TO AVOID:

WILL NOT OCCUR

NE

REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S.

"JAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD
REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO
COAST GUARD TOLL FREE NUMBER 800-424-8802. IN CASE OF ACCIDENT OR ROAD
SPILL NOTIFY CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

PERSONNEL PERFORMING CLEANUP MUST USE PROTECTIVE EQUIPMENT. ADSORB ON FIRE RETARDANT TREATED SAWDUST, DIATOMACEOUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

WASTE MANAGEMENT:

POUR WASTE INTO A LARGE TANK OF WATER AND NEUTRALIZE WITH 6M HCL. DISPOSE OF WASTE AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

CHEMICAL TYPE GOGGLES MUST BE WORN.

YIN PROTECTION:

NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED.

RESPIRATORY PROTECTION:

NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

VENTILATION:

NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

OTHER: PRIMARY ROUTE OF ENTRY-SKIN CONTACT

STORAGE: SEE APPENDIX FOR PRECAUTIONARY LABEL. ICG-756

STORED MATERIALS MUST BE LABELED AS: CAUSES EYE BURNS.

- TUTE HEALTH HAZARDS

EYE AND RESPIRATORY IRRITANT

CARCINOGENICITY

LISTED: NTP NO IARC MONOGRAPHS NO OSHA REGULATED NO

SIGNS AND SYMPTOMS OF EXPOSURE:

RESPIRATORY AND EYE IRRITATION

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

NONE KNOWN .

SUBACUTE AND MUTAGENICITY (SUMMARY)

NONE KNOWN

CHRONIC OR SPECIALIZED (SUMMARY)

NE

OTHER DATA

PRODUCT REPORTED TO PRODUCE EYE EFFECTS

PRECAUTIONARY LABEL TEXT FOR PACKAGED PRODUCTS

TETRAPOTASSIUM PYROPHOSPHATE

DANGER. CAUSES EYE BURNS.

DO NOT GET IN EYES. WASH THOROUGHLY AFTER HANDLING.

FIRST AID: FOR EYE CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.

FOR INDUSTRIAL USE ONLY.

ATTENTION.

EMPTY CONTAINERS MAY CONTAIN PRODUCT RESIDUE, INCLUDING FLAMMABLE OR EXPLOSIVE VAPORS. DO NOT CUT, PUNCTURE OR WELD ON OR NEAR CONTAINER. ALL LABEL WARNINGS AND PRE-CAUTIONS MUST BE OBSERVED UNTIL THE CONTAINER HAS BEEN THOROUGHLY CLEANED OR DESTROYED.

REFER TO PRODUCT MATERIAL SAFETY DATA BULLETIN FOR FURTHER SAFETY AND HANDLING INFORMATION.

> ALBRIGHT & WILSON INC. P. O. BOX 26229 RICHMOND, VA. 23260-6229 (USA)

MONSANTO PRODUCT NAME

TETRASODIUM PYROPHOSPHATE (TSPP) F-0 R-0 PP-B

H - 0

MONSANTO COMPANY 800 N. LINDBERGH BLVD. ST. LOUIS, MO 63167

Emergency Phone No. (Call Collect) 314-694-1000

PRODUCT IDENTIFICATION

Synonym(s):

TSPP; Sodium pyrophosphate; Tetrasodium pyrophosphate

anhydrous

Chemical Name:

Diphosphoric acid, tetrasodium salt

Chemical Formula:

Na₄P₂O₇

Chemical Family:

Phosphate salts

CAS No.:

7722-88-5

TSCA Inventory:

Diphosphoric acid, tetrasodium salt appears on the Inventory of

Chemical Substances published by the U.S. Environmental Protection Agency (EPA) under authority of the Toxic Substances

Control Act (TSCA).

DOT Proper Shipping

Name:

Not Applicable

DOT Hazard Class/

I.D. NO.:

Not Applicable

DOT Label(s):

Not Applicable

Sodium Phosphate

U.S. Surface Freight

Classification:

Reportable Quantity (RQ)

Under U.S. EPA CERCLA

Regulations:

Not Applicable

Hazardous Chemical(s)
Under OSHA Hazard

Communication Standard:

The substance listed below is identified as a hazardous chemical

under the criteria of the OSHA Hazard Communication Standard

(29 CFR 1910.1200):

Tetrasodium pyrophosphate, CAS Reg. No. 7722-88-5

PRECAUTIONARY MEASURES AND FIRST AID

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES. THESE PRACTICES INCLUDE AVOIDING UNNECESSARY EXPOSURE AND REMOVAL OF THE MATERIAL FROM EYES, SKIN AND CLOTHING.

OCCUPATIONAL CONTROL PROCEDURES

Eye Protection:

Tetrasodium pyrophosphate anhydrous does not present significant eye irritation

or eye toxicity requiring special protection.

Skin Protection:

Wear protective gloves to minimize skin contact.

(Occupational Control Procedures Continued On The Next Page)

G.L.P. 15 7 163

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OCCUPATIONAL CONTROL PROCEDURES (Continued)

Respiratory

Protection:

Use NIOSH approved equipment suitable for nuisance dusts when airborne

exposure is excessive. Consult respirator manufacturer to determine appropriate

type equipment for given application.

Ventilation:

Provide ventilation to control exposure levels below airborne exposure limits.

Local exhaust ventilation preferred.

Airborne Exposure Limits:

Product: Tetrasodium pyrophosphate

OSHA PEL: None Established

ACGIH TLV®/TWA: 5 mg/m³

Although OSHA has not established specific exposure limits for this material, OSHA has established the following limits for nuisance dusts:

OSHA PEL/TWA: Total 15 mg/m³; Respirable 5 mg/m³

The OSHA limits are stated only to indicate the least stringent airborne dust exposure levels applicable to nuisance dusts. Tetrasodium pyrophosphate anhydrous may cause eye and respiratory tract irritation at exposure concentrations below the OSHA limits.

FIRE PROTECTION INFORMATION

This material is not combustible.

REACTIVITY DATA

Materials To Avoid:

None.

Hazardous Decomposition

Products:

None.

Hazardous Polymerization:

Does not occur.

HEALTH EFFECTS SUMMARY

The following information presents both human experience and the results of scientific experiments used by qualified experts to assess the effects of tetrasodium pyrophosphate anhydrous on the health of industrially exposed individuals and to support the Precautionary Statements and Occupational Control Procedures recommended in this document. To avoid misunderstanding, the data provided in this section should be interpreted by individuals trained in evaluation of this type of information.

Human Experience

Inhalation and dermal contact are expected to be the primary routes of occupational exposure to tetrasodium pyrophosphate anhydrous. Occupational exposure to tetrasodium pyrophosphate anhydrous has not been reported to cause significant adverse human health effects. Exposure to the dust of this material, however, may be irritating to eyes and respiratory tract. On the basis of available information, exposure to tetrasodium pyrophosphate is not expected to produce significant adverse human health effects when recommended safety precautions are followed.

(Health Effects Summary Continued On The Next Page)

STEELS OF STATES

Monsanto MATERIAL SAFETY DATA

HEALTH EFFECTS SUMMARY (Continued)

Toxicological Data

Data from Monsanto studies indicate the following:

Oral LD₅₀ (Rat): 3,160 mg/kg, Slightly Toxic

Dermal LD₅₀ (Rabbit): Greater than 7,940 mg/kg, Practially Nontoxic Eye Irritation (Rabbit): 8.2 on a scale of 110.0, Slightly Irritating Skin Irritation (Rabbit): 0.0 on a scale of 8.0, Slightly Irritating

No mutagenic effects were reported in microbial assays using three Salmonella strains and one strain of Saccharomyces yeast, with and without mammalian microsomal activation.

No teratogenic, fetotoxic, or maternal toxic effects were observed in mice and rats administered tetrasodium pyrophosphate at 130 mg/kg and 138 mg/kg, respectively, on days 6 through 15 of gestation.

PHYSICAL DATA

Appearance and Odor: White powder or granules; odorless

Melting Point: Begins to melt incongruently @ 622°C;

completely melted @ 985°C

pH (1% solution @ 25℃):

Bulk Density (Ibs./cu. ft.): Powder 72-75 (Packed)

> Granular 69-73 (Solvay Cup)

Solubility (g/100 g H_2O): 3.1 @ 0°C

> 6.4 @ 25°C 17.6 @ 50°C 49.3 @ 75°C 47.1 @ 100°C

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

SPILL, LEAK & DISPOSAL INFORMATION

Emergency Spill And

Leak Information:

Sweep, scoop or vacuum up all spilled material, contaminated soil and other contaminated material and place in containers. If possible, complete cleanup on a dry basis. After all practical dry cleanup has been done, residual contamination can be flushed with plenty of water.

Disposal Information: Dispose of in a landfill in accordance with all applicable local, state and federal regulations.

ADDITIONAL COMMENTS

Product is moderately hygroscopic and should be stored in a dry area to prevent moisture pickup and caking.

DATE: 1

10/1/85

SUPERSEDES:

MSDS NO.:

007722885

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CONTACT:

Product Acceptability Coordinator Detergent Materials Monsanto Industrial Chemical Co. 314-694-2096 (A Unit of Monsanto Company)

Although the information and recommendations set forth herein (hereinafter "Information) are presented in good faith and believed to be correct as of the date hereof. Monsanto Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Monsanto Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.



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OCEANSM Network **EMERGENCY PHONE 1-800-OLIN-911**

SECTION I - IDENTIFICATION

PP- B

CHEMICAL NAME & SYNDNYMS Trisodium Phosphate - Cry	stalline	
CHEMICAL FAMILY Phosphates	FORMULA Na ₃ PO ₄	TRADE NAME
DESCRIPTION White crystalline odorles	s solid	CAS NO. 7601-54-9

SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Do not take internally. Upon contact with skin or eyes, wash off with water. Avoid breathing dust. Store in a cool dry place.

PROTECTIVE EQUIPMENT	VENTILATION REQUIREMENTS
EYES Goggles	Local mechanical exhaust ventilation
GLOVES Polyvinyl chloride	recommended to minimize employee exposure.
DTHER None required	

SECTION III - HAZARDOUS INGREDIENTS

BASIC MATERIAL	OSHA PEL	LD50	LC50	SIGNIFICANT EFFECTS
Trisodium phosphate	None established	4.5 g/kg (rat)	No data	Skin, eye and mucous membrane irritation.
١				

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT Not applicable METHOD	OSHA CLASSIFICATION Non-compustible	FLAMMABLE	EOM EN	UPPER
		EXPLOSIVE LIMIT		סא
EXTINGUISHING MEDIA Non-combu	stible - Choose extinguishing media sui	table for su	urroundin	9
SPECIAL FIRE HAZARD & FIRE FI	GHTING PROCEDURES Use NIOSH/MSHA approviratus when any material is involved in	ed positive	pressure	· · · · · · · · · · · · · · · · · · ·

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE None established SYMPTOMS OF OVER EXPOSURE	;	
Eve. Skin and mucous membrane irritation. EMERGENCY FIRST-AID PROCEDURES		
KIN Flush with water for 15 minutes, call a physician.		
EYES Flush with water for 15 minutes, call a physician.		
Drink large quantities of water. Induce vomiting by sticking finger INGESTION a physician.	down throat.	Call
INHALATION Remove victim to fresh air. Call a physician.	G.L.P. wy 12 76	

SECTION VI - TOXICOLOGY (PRODUCT)

ACUTE ORAL LD 50 4.5 g/kg (rat) ACUTE DERMAL LD 50 No data ACUTE INHALATION LC 50

CARCINOGENICITY Not known to be carcinogenic MUTAGENICITY Not known to be mutagenic EYE IRRITATION Innitant PRIMARY SKIN IRRITATION

Irritant

PRINCIPAL ROUTES OF ABSORPTION

Inhalation, dermal.

No data

EFFECTS OF ACUTE EXPOSURE

Eye, skin and mucous membrane irritation. Nausea.

EFFECTS OF CHRONIC EXPOSURE

None expected at industrial use levels.

SECTION VII - SPILL AND LEAKAGE PROCEDURES (CONTROL PROCEDURES)

ACTION FOR MATERIAL RELEASE OR SPILL

Wear NIOSH/MSHA approved dust respirator. Follow OSHA regulations for respirator use (see 29 CFR 1910.134). Wear goggles, coveralls, impervious gloves and boots. Shovel or sweep up and place in an approved DOT container and seal. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency telephone number shown on the front of this sheet.

TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate Federal, State and local regulatory agencies to ascertain proper disposal procedures.

SECTION VIII - SHIPPING DATA

D.O.T. Sodium Phosphate, Tribasic ORM-E NA 9148

SECTION IX - REACTIVITY DATA

STABLE Y UNSTABLE AT HAZARDOUS MAY OCCUR POLYMERIZATION WILL NOT OCCUR CONDITIONS TO AVDID INCOMPATIBILITY (MATERIAL TO AVOID)

No data HAZARDOUS DECOMPOSITION PRODUCTS

Phosphorus oxides

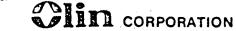
SECTION X - PHYSICAL DATA

MELTING POINT 75'F	VAPOR PRESSURE Nil	VOLATILES NIT
BOILING POINT No data	SOLUBILITY IN WATER 21%@60 F	EVAPORATION RATEN/A
SPECIFIC GRAVITY(H20=1) 1.6	PH 1%Sol=12	VAPOR DENSITY(AIR=1) N/A

INFORMATION: FURNISHED TO

45566595

DATE DECEMBER 2. 1985 FURNISHED BY Department of Environmental Hygiene and Toxicology (203) 789-5436



120 Long Ridge Road, Stamford, Connecticut 06904 OCEANSM Network **EMERGENCY PHONE 1-800-OLIN-911**

ATTN: DEPT HANDLING MATE SAFETY DATA SHEETS DUBDIS CHEMICAL INC DIV CHEMED CORP P 0 BOX 41268

SHARONVILLE OH 45241

HEALTH

PP-B

REACTIVITY

(YELLOW)

MATERIAL SAFETY DATA

7601

54 9

TRISUDIUM PHOSPHATE ANHYDROUS

NFPA Designation 704

DEGREE OF HAZARD

- EXTREME
- HIGH MODERATE SLIGHT
- 0 INSIGNFICANT

(913) 749-8100 (201) 541-4171

LAWRENCE, KS CARTERET, NJ

CHEMTREC:

REVISION:

(800) 424-9300

TRANSPORTATION

HEDICAL:

PLANTS:

(303) 595-9048

ROCKY MTN

SPECIAL HAZARD

PRINTED: 11/09/85

2

PREPARED FOR USE BY

0

EMERGENCY TELEPHONES:

DUBOIS CHEMICALS DIV OF CHEMED CORP 3630 E KEMPER RD

EFFECTIVE: 09/14/85

IDENTIFICATION ===

INFORMATION PROVIDED BY ..:

FMC CERPORATION 2000 MARKET STREET PHILADELPHIA PA 19103

IATA..

PRODUCT INFORMATION =

SYNONYMS..... SHIPPING NAME - DOT ...

SODIUM PHOSPHATE TRIBASIC, TSP SCDIUM PHOSPHATE, TRIBASIC SODIUM PHOSPHATE, TRIBASIC SODIUM PHOSPHATE, TRIBASIC

FORMUL A

NA3PO4 **PHOSPHATE**

CHEMICAL FAMILY ..

PRECAUTIONARY INFORMATION =====

OSHA HAZARD CLASSIFICATION PRECAUTIONS.... (PLEASE USE THIS STATEMENT

TO SATISFY THE IN-PLANT LABELING REQUIREMENTS OF THE OSHA HAZARD COMMUNICATIONS STANDARD 29CFR 1910-12001

PRODUCT IS STRONGLY BASIC (ALKALINE); CONTACT WITH TISSUE MAY CAUSE CHEMICAL BURNS. AVOID CUNTACT. WASH THOROUGHLY WITH WATER TO REMOVE.

INGREDIENTS ======

CAS# AND COMPUNENT...

MATERIAL OR COMPONENT: TRISODIUM PHOSPHATE

PERCENT

: 100

CAS#

7601-54-9°

HAZARD CLASS

: IRRITANT

2.1.1. 37 12 13

REACTIVITY

MATERIAL SAFETY DATA

7601

54 9

TRISCUIUM PHOSPHATE ANHYDROUS

NFPA Designation 704

HEALTH

(BLUE)

DEGREE OF HAZARD

4 = EXTREME V S = HIGH

1 = SLIGHT 0 = INSIGNFICANT

EMERGENCY TELEPHONES:

PLANTS:

(913) 749-8100

LAWRENCE, KS

(201) 541-4171 CHEMTREC:

0

CARTERET, NJ

(800) 424-9300

TRANSPORTATION

MEDICAL:

(303) 595-9048

ROCKY MTN

PRINTED: 11/09/85

FLAMMABILITY

REVISION:

EFFECTIVE: 09/14/85

PHYSICAL DATA ============

MELTING POINT: BOILING POINT:

VAPOR PRESSURE.....

VAPOR DENSITY (AIR - 1) ... NON-VOLATILE

ROOM TEMPERATURE

APPEARANCE AND STATE:

000R......

SPECIFIC GRAVITY (H20 =1):

SOLUBILITY IN H20 % BY HT: VOLATILES BY VOLUME....: NON-VOLATILE

EVAPORATION RATE

(BUTYL ACETATE = 1) .:

PH (14 SOLUTION)

OVER 1300C

OVER 1500C

NGN-VOLATILE

WHITE GRANULES OR POWDER

NONE

BULK DENSITY 1.0 G/ML

12 a 25C

NON-VOLATILE

11.9

FLASH POINT NON COMBUSTIBLE AUTOIGNITION TEMPERATURE .: NON COMBUSTIBLE

FLAMABLE LIMITS UPPER ...: NOT APPLICABLE

(AIR)

EXTINGUISHING MEDIA....:

SPECIAL FIREFIGHTING....: NOT APPLICABLE

PROCEDURES

DEGREE OF FIRE AND: NONE

EXPLOSION HAZARD

STABILITY

HAZARDOUS POLYMERIZATION .:

CONDITIONS TO AVOID....:

MAJOR CONTAMINANTS THAT ...

CONTRIBUTE TO INSTABILITY

INCOMPATIBILITY:

HAZARDOUS DECOMPOSITION ..:

PRODUCTS

LOWER ...: NOT APPLICABLE

NOT APPLICABLE

STABLE

WILL NOT OCCUR

NONE

NONE

NONE

NONE

PAGE 02

MATERIAL SAFETY DATA

7601

54 9

TRISODIUM PHOSPHATE ANHYDROUS

NFPA Designation 704

DEGREE OF HAZARD

4 = EXTREME
3 = HIGH
2 - MODERATE
1 - SLIGHT
0 - INSIGNFICANT

EMERGENCY TELEPHONES:

PLANTS:

(913) 749-8100

LAWRENCE, KS

(201) 541-4171

CARTERET, NJ

CHEMTREC:

(800) 424-9300

TRANSPORTATION

HEALTH REACTIVITY YELLOW) (BLUE)

FLAMMABILITY

MEDICAL: (303) 595-9048	ROCKY MTN	HAZARD
REVISION: 0	EFFECTIVE: 09/14/85	PRINTED: 11/09/85
	ROUTES OF EXPOSURE =====	
EYE CONTACT	IRRITATING TO EYES, CORR 24 HOURS. IN RABBIT.	OSIVE EFFECT AFTER
	SOURCE: AIHA J. 43 NO. 1 DATE: 1982	
SKIN CONTACT	MODERATE DEGREE OF IRRIT OCCLUDED SKIN (RABBIT). SOURCE: AIHA J. 43 NO. 1	
SKIN ABSORPTION	DATE: 1982	
	SOURCE: AIHA J. 43 B-51 DATE: 1982	
INHALATION	SMALL AMOUNTS OF DUST VE	0 0 51 0475 1000
INGESTION:	SLIGHTLY TOXIC 20% AQUEC LD50 (RAT) = 6500 MG/KG	OUS SOLUTION
	SOURCE: AIHA J. 43 B-51 DATA FOR ABOVE ROUTES OF	
·	SIMILAR PRODUCT (TRISODI	
	EFFECTS OF OVEREXPOSURE	= 5= == ===============================
ACUTE EXPUSURE	INHALATION OF HEAVY DUST AND THROAT. INGESTION N	
	THROAT, AND GASTROINTEST WITH EYES PRODUCES LOCAL	INAL TRACT. CONTACT IRRITATION AND
CHRONIC EXPOSURE:	PUSSIBLE CONJUNCTIVITIS. ALTHOUGH NO LONG TERM HU BEEN REPORTED, THERE ARE	MAN STUDIES HAVE NO REPORTED CHRONIC

DUST.

EFFECTS THAT WARRANT CONTRAOL BEYOND THAT REQUIRED TO AVOID IRRITATION FROM AIRBORNE

PAGE 03

REACTIVITY

YELLOW

MATERIAL SAFETY DATA

7601

54 9

TRISODIUM PHOSPHATE ANHYDROUS

NFPA Designation 704

HEALTH

DEGREE OF HAZARD

- 4 = EXTREME
- = HIGH = MODERATE
- 1 SLIGHT 0 INSIGNFICANT

EMERGENCY TELEPHONES:

PLANTS:

(913) 749-8100

LAWRENCE. KS CARTERET, NJ

CHEMTREC:

INHALATION...

INGESTION. ...

(201) 541-4171 **(800) 424-9300**

TRANSPORTATION

EFFECTIVE: 09/14/85

MEDICAL:

(303) 595-9048

ROCKY MTN

PRINTED: 11/09/85

0 .

FLAMMABILITY (PED)

2

REVISION: 0

EMERGENCY AND FIRST AID PROCEDURES ==

FLUSH THOROUGHLY WITH WATER FOR AT LEAST IF IRRITATION PERSISTS, OBTAIN 15 MINUTES. MEDICAL ATTENTION.

WASH OFF WITH WATER. IF IRRITATION IS EVIDENT, OBTAIN MEDICAL ATTENTION. REMOVE FROM EXPOSURE. IF BREATHING IS

DIFFICULT OR DISCOMFORT PERSISTS, OBTAIN MEDICAL ATTENTION.

RINSE MOUTH WITH WATER, GIVE WATER TO CAUSE PARTICLES TO DISSOLVE. DO NOT CAUSE VOMITING.

WASH WITH SOAP AND WATER.

STRONGLY ALKALINE, MAY REMOVE SEBACEOUS DILS LEAVING SKIN UNPROTECTED AND MAY CAUSE CHEMICAL BURNS. ACCESSIBLE EXPOSED TISSUES SHOULD BE FLUSHED THOROUGHLY WITH WATER, AND ANY CORNEAL BURNS HARRANT CONSULTATION OF AN OPHTHALMOLOGIST.

INGESTION MAY RESULT IN NAUSEA, VOMITING, AND BURNS, ESPECIALLY OF THE ESOPHAGUS. ATTEMPTS TO NEUTRALIZE INGESTED MATERIAL WITH ACIDS MAY CAUSE EXCESS HEAT AND GAS PRODUCTION WHICH CAN INCREASE THE RISK OF PERFORATION. DILUTION MAY DO LIKEWISE, BUT WHEN THE DRY MATERIAL IS INGESTED, ADHERENCE OF PARTICLES TO THE ESOPHAGEAL MUCOSA MAY ASSURE PERFORATION SO THAT IMMEDIATE DRINKING OF COLD WATER OR MILK IS ADVISED.

BURNS OF THE ESUPHAGUS AND/OR STOMACH SUFFICIENT TO LEAD TO PERFORATION AND/OR STRICTURE FORMATION MAY OCCUR WITHOUT DRUPHARYNGEAL BURNS. ACCURDINGLY, MOST AUTHORITIES RECOMMEND LIMITED ESOPHAGOSCOPY SUFFICIENT TO DETERMINE IF DEEP AND/OR CIRCUMFERENTIAL BURNS ARE PRESENT, BECAUSE THEY ARE MOST LIKELY TO RESULT IN ESOPHAGEAL STENOSIS. PREVENTION OF THE LATTER IS CONTROVERSIAL. THOUGH MOST AUTHORITIES FAVOR EARLY CORTICOSTEROID AND/OR PROPHYLACTIC UILATION THERAPY.

PAGE 04

DECONTAMINATION PROCEDURE: NOTES TO PHYSICIAN....

MATERIAL SAFETY DATA

EMERGENCY TELEPHONES:

7601

54 9

TRISODIUM PHOSPHATE ANHYDROUS

NFPA Designation 704

DEGREE OF HAZARD

4 = EXTREME 3 = HIGH 2 MODERATE 1 SLIGHT 0 : INSIGNFICANT

(913) 749-8100 (201) 541-4171

LAWRENCE, KS CARTERET, NJ

CHEMTREC:

(800) 424-9300

TRANSPORTATION

PLANTS:

YTIJISAMMAJI (GBR) HEALTH REACTIVITY (YELLOW) 2 SPEC!AL

MEDICAL: (303) 595-9048	ROCKY MTN SPECIAL HAZARD
REVISION: 0	EFFECTIVE: 09/14/85 PRINTED: 11/09/85
** *** = = = = = = = = = = = = = = = =	EMERGENCY AND FIRST AID PROCEDURES DEMULCENTS MAY PROVIDE SOME RELIEF OF MILD TO MODERATE PAIN; SEVERE PAIN MAY REQUIRE OPIATES. TREATMENT OTHERWISE IS SYMPTOMATIC AND SUPPORTIVE, WITH ATTENTION TO THE POSSIBLE COMPLICATIONS OF GLOTTAL OBSTRUCTION, ESOPHAGEAL PERFORATION AND SHOCK.
***********	SPECIAL PROTECTION ====================================
VENTILATION REQUIREMENTS.: RECOMMENDED PERSONAL: PROTECTIVE EQUIPMENT	USE GENERAL ROOM VENTILATION OR LOCAL EXHAUST VENTILATION IN PROCESSES OR HANDLING WHEN AIRBORNE DUST IS EXPECTED TO BE RELEASED INTO THE WORK ENVIRONMENT. SEE BELOW
	USE NIDSH/MSHA APPROVED RESPIRATORY PROTECTION IF AIRBORNE DUST IS EXPECTED.
EYES:	WEAR CHEMICAL GOGGLES, IF AIRBURNE DUST IS EXPECTED.
GLUVES	NO SPECIAL REQUIREMENT. NO SPECIAL REQUIREMENT.
22.22.22.23.22.22.22.23.23.23.23.23.23	STORAGE AND HANDLING ====================================
(PLEASE USE THIS STATEMENT TO SATISTY THE IN-PLANT LABELING REQUIREMENTS OF THE OSHA HAZARD	PROTECTION AND CHEMICAL GOGGLES, IF AIRBORNE DUST IS EXPECTED.
29CFR 1910-1200)	STORE IN A DRY AREA, FOR PRODUCT QUALITY ASSURANCE.
	DISPOSAL. SPILL OR LEAK PROCEDURES =========
PROCEDURE FUR RELEASE: OR SPILL	MATERIAL SHOULD BE SWEPT UP FUR SALVAGE OR DISPOSAL.

54 9

TRISUDIUM PHOSPHATE ANHYDROUS

NFPA Designation 704

HEALTH

(BLUE)

DEGREE OF HAZARD

4 = EXTREME

3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNFICANT

EMERGENCY TELEPHONES:

PLANTS:

(913) 749-8100

LAWRENCE, KS

(201) 541-4171

CARTERET. NJ

CHEMTREC:

REVISION:

(800) 424-9300

TRANSPORTATION

EFFECTIVE: 09/14/85

MEDICAL:

(303) 595-9048

ROCKY MIN

PRINTED: 11/09/85

REACTIVITY

(YELLOW)

FLAMMABILITY

2

NA 9148 -

DISPOSAL. SPILL OR LEAK PROCEDURES =

WASTE DISPOSAL METHOD.

0

IF MATERIAL CAN NOT BE SALVAGED, A METHOD OF DISPOSAL IS IN A LANDFILL IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL

REGULATIONS.

NOT REQUIRED

TRANSPORTATION DATA ====

SODIUM PHOSPHATE, TRIBASIC

DOT PROPER SHIPPING NAME .:

DOT CLASSIFICATION:

DOT LABELS

DOT MARKING....

SODIUM PHOSPHATE, TRIBASIC

DOT PLACARD....: NOT REQUIRED

NUMBER

NA 9148 5000 LBS. (2270 KG)

HAZARDOUS SUBSTANCE/RQ...: 49 STCC NUMBER:

EMERGENCY ACCIDENT

PRECAUTIONS AND PROCEDURE:

MATERIAL IS STRONGLY BASIC (ALKALINE); TAKE CARE TO AVOID CONTACT WITH LARGE AMOUNTS OF DUST. SEE INSTRUCTIONS ABOVE FOR RELEASE

OR SPILL.

4966383

PRECAUTIONS TO BE TAKEN ..:

IN TRANSPORTATION

CMA CHEMCARD NUMBER....: TYPE PACKAGES:

OTHER SHIPPING IDS....

NONE

NONE

ORM-E

MULTIWALL PAPER BAGS

ADDITIONAL REGULATORY INFORMATION ==

MATERIAL IS REPORTED IN

EPA TSCA INVENTORY LIST?

MATERIAL IS LISTED AS A ?

CARCINOGEN/POTENTIAL CARCINOGEN IN FOLLOWING

NTP ANNUAL REPURT ... ?

IARC MONOGRAPHS....

JSHA 29CFR PART 1910

SUBPART Z ?

YES

NO NO

NO

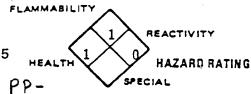
FDA GRAS LIST; PERMITTED IN FOOD.

PAGE 06



EMERGENCY PHONE (203) 356-2345

Olin Corporation, 120 Long Ridge Road Stamford, Conn. 06904



MATERIAL SAFETY DATA

DBC-1740

		SECTION I -	IDENTIFICATION		ノリレー	11-10
CHEMICAL NAME & SYN	•	inobis ethanol				
CHEMICAL FAMILY	;	FORMULA .	(HOCH ₂ CH ₂) ₂ NH	TRADE NAME DEA		
DESCRIPTION liquid at hig		ter white viscou om temperature		CAS NO. 111-42-2	2 .	-

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE Do not get in eyes, on skin or on clothing. Do not take internally. Avoid breathing mist or vapors. Store in a cool, dry, well-ventilated place.

PROTECTIVE EQUIPMENT VENTILATION REQUIREMENTS	
Goggles Gloves Neoprene, Buna-N or PVC Other Coveralls and boots Local exhaust ventilation is where exposure to mist occur.	

SECTION III - HAZARDOUS INGREDIENTS

BASIC MATERIAL	APPROX.	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
			·.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT METHOD	3090F	coc	OSHA CLASSIFICATION Class LIB Combustible Liquid	FLAMMABLE EXPLOSIVE LIMITS	LOWER	UPPER
extinguishin Water		ry chen	nical, "alcohol" foam, carbon dioxide			
1	-		ting procedures Use NIOSH/MSHA ap here this material is involved in a fire.	proved, self	-containe	ed .

SECTION V - HEALTH HAZARD DATA

THRESHOLD L	3.0 ppm (ACGIH)	
SYMPTOMS OF	over exposure Skin, eye and mucous membrane irritation.	
SKIN	EMERGENCY FIRST-AID PROCEDURES Flush with water for 15 minutes, call a physician.	
EYES	Flush with water for 15 minutes, call a physician.	
INGESTION	Wash out mouth with water. Give milk, orange or lemo vinegar to drink. Call a physician.	n juice or
INHALATION	Remove victim to fresh air. Call a physician.	G.L.P. : AY 7 18S

ALUMINUM EXTRUDED SHAPES, INC. 10549 READING ROAD CINCINNNATI, OHIO 45241

ISSUE DATE: November 1, 1985 IDENTIFICATION NUMBER:

RDW-1

TRADE NAME (Common name or synonym): ALUMINUM ALLOY EXTRUSION EMERGENCY PHONE NUMBER

:R:

CHEMICAL NAME:

Aluminum

FORMULA: ΑI

DOTIDENTIFIC TION NUMBER:

513-563-2205

I. INGREDIENTS

MATERIAL OR COMPONENT:

Bas: Motal

% Composition By Weight

CAS#

1984-85 ACGIH* TLV(rng/M3)

OSHA 1910.1000** PEL (mg/M3) (TWA)

Aluminum

97.7-99.7

7429-90-5

10.0 as metal dust & oxide 5.0 as welding fume Not established

Not established

ALLOYING ELEMENT (%)

Vanadium

Magnesium Silicon

Iron

< 1.0 Manganese < 1.0 Zinc Nickel

< 1.0

< 1.0 < 0.1

< 1.0 Copper < 1.0 Titanium Chromium < 0.1 Boron

< 0.1 < 0.1 < 0.1

TLV = Threshold Limit Value

PEL= Permissible Exposure Level TWA = Time Weighted Average

II. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):

Liquid

X Solid Gas Other

APPEARANCE AND ODOR:

Metallic Appearance; No odor

ACIDITY/ALKALINITY

pH = NA

Melting Point 900-1200° F

Boiling Point NA

Specific Gravity 2.7 $(H_2O = 1)$ Solubility in water None (% by weight)

VAPOR PRESSURE (mm Hg at 20° C)

III. PERSONAL PROTECTIVE EQUIPMENT

Provide adequate ventilation to meet exposure limits (Section 1). A NIOSH approved respirator should be worn when the exposure limit is or may be exceeded. Other personal protective equipment, ie. glasses, goggles, gloves, clothing, ear protection, will be determined by the nature of the processing activity (grinding, welding, machining etc.)

IV. EMERGENCY MEDICAL PROCEDURES

Skin Contact - Remove particles by thoroughly washing with soap and water Eye Contact - Flush with water for at least 15 minutes, lifting eyelids occasionally. Get medical attention if irritation persists.

Will not occur

UC 4000

MATERIAL SAFETY DATA SHEET

24 Hour Emergency Phone (316) 524-5751

•	I – IDEI	NTIFICATIO	N .		
CHEMICAL NAME		HEMICAL FORM	1ULA	MOLECULAR WE	IGHT
Sodium Hydroxide, Anhydrou TRADE NAME	3	NaOH		40.00	
Caustic Soda, Anhydrous, B	eads and Solid				
SYNONYMS			DOTIDE	NTIFICATION NO.	
Caustic, Beads, Bead Caust	lc, Soda Lye		18	23	
	II PRODUCT AI	ND COMPO	NENT DATA		
COMPONENT(S) CHEMICAL NAME			CAS REGISTRY NO.	% (Approx)	ACGIH TLV-TW
		•		((pprox)	7.00
Sodium Hydroxide			1310-73-2	100	2 mg/m ³ Ceiling
				•	cering.
	,	•		•	·
	***		<u> </u>	34.	
	III – PHY	SICAL DATA	A		
APPEARANCE AND ODOR		SPECIFIC	GRAVITY		
White solid or bead; odorless		2.1	3 gm/cc		•
BOILING POINT		VAPOR D	ENSITY IN AIR (Air = 1)		
n/a		N/A			•
VAPOR PRESSURE	·	27. 1/01 47	11 5 DV VOI 1145		
N/A		9% VOLAT	ILE, BY VOLUME		
WA _.			•		
EVAPORATION RATE			TY IN WATER		
0	•	100	7.		·
					
	IV – REAC	TIVITY DAT	A		
STABILITY	CONDITIONS TO AVOID				
Stable	Protect against	contact with	h moisture.		
		• .			
INCOMPATIBILITY (Materials to avoid)	<u> </u>		<u> </u>		·····
Readts vigorously with water trifluoride, hydroquinone,				rolein, alumir	um, chlorine
HAZARDOUS DECOMPOSITION PRODUCT	'S				
Will not decompose					
HAZARDOUS POLYMERIZATION					

0.L.P. 1927 195

V - FIRE AND EXPLOSION HAZARD DATA FLASH POINT (Method used) FLAMMABLE LIMITS IN AIR N/A N/A **EXTINGUISHING AGENTS**

UNUSUAL FIRE AND EXPLOSION HAZARDS

In the presence of moisture, will react with some metals, e.g. aluminum, tin, and zinc, to form flammable hydrogen gas.

VI - TOXICITY AND FIRST AID

EXPOSURE LIMITS (When exposure to this product and other chemicals is concurrent, the TLV must be defined in the workplace.)

ACGIH: 2 mg/m³ Ceiling 2 mg/m³ (8 hr) TWA OSHA:

Effects described in this section are believed not to occur if exposures are maintained at or below appropriate TLVs. Because of the wide variation in individual susceptibility, TLVs may not be applicable to all persons and those with medical conditions listed below

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

No known medical conditions appravated by exposure.

ACUTE TOXICITY

Primary route(s) of exposure:

| Inhalation

Skin Absorption

☐ Ingestion

Inhalation: Inhalation of dust or mist can cause mild irritation at 2 mg/m³. More severe burns and tissue damage at the upper respiratory tract, can occur at higher concentrations. Pneumonitis can result from severe exposures.

Skin: Major potential hazard - Bead or liquid contact with the skin can cause severe burns with deep ulcerations. Contact with dust or mist can cause multiple burns with temporary loss of hair at burn site. Solutions of 4% may not cause irritation and burning for several hours, while 25 to 50% solutions cause these effects in less than 3 minutes.

Eyes: Major potential hazard - Beads in the eye can cause severe destruction and blindness. These effects can occur rapidly effecting all parts of the eye. Mist or dust can cause irritation with high concentrations causing destructive burns.

Ingestion: Ingestion of sodium hydroxide can cause severe burning and pain in lips, mouth, tongue, throat and stomach. Severe scarring of the throat can occur after swallowing. Death can result from ingestion.

FIRST AID

Inhalation: Move person to fresh air. If breathing stops, administer artificial respiration. Get medical attention immediately.

Skin: Remove contaminated clothing and immediately wash skin thoroughly for a minimum of 15 minutes under safety shower. Get medical attention immediately.

Eyes: Wash eyes immediately with large amounts of water (preferably eyewash fountain), lifting the upper and lower eyelids occasionally. Continue washing for a minimum of 15 minutes. Get medical attention immediately.

Ingestion: If person is conscious, give large quantities of water to dilute caustic. Do not induce vomiting. Get medical attention immediately.

CHRONIC TOXICITY

No known chronic effects.

Carcinogenicity: Sodium hydroxide has not been studied relative to carcinogenicity. Sodium hydroxide is not listed on the IARC, NIP or OSHA carcinogen list.

Reproductive Toxicity: Sodium hydroxide has not been studied relative to reproductive effects.

VII - PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION

Above 2 mg/m 3 use approved high-efficiency particulate filter with full facepiece or self-contained breathing apparatus.

VENTILATION

As necessary to maintain concentration in air below 2 mg/m³.

SKIN PROTECTION

Wear neoprene, PVC, or rubber gloves; PVC rain sult; rubber boots with pant legs over boots.

EYE PROTECTION

Chemical goggles which are dust and splashproof. When mixing solutions, wear face shield or hood to protect face from splashing.

HYGIENE

Avoid contact with skin and avoid breathing dust. Do not eat, drink, or smoke in work area. Wash hards prior to eating, drinking, or using bathroom. Any protective clothing, clothing or shoes which become contaminated with caustic should be removed immediately and thoroughly laundered before reuse.

OTHER CONTROL MEASURES

Safety shower and eyewash station must be located in immediate work area. Any non-impervious clothing or shoes which become contaminated with caustic should be removed immediately. To determine the exposure level(s), monitoring should be performed regularly.

VIII - STORAGE AND HANDLING PRECAUTIONS

Keep labeled and sealed containers in a dry area.

When dissolving in water, use warm water but not exceeding 100°F. Slowly add caustic to surface of water with constant stirring to avoid violent spattering. Full protective clothing should be worn. Large amount of heat will be evolved.

Contact of caustic soda cleaning solutions with food and beverage products (in enclosed vessels or spaces) may produce lethal concentrations of carbon monoxide gas.

IX - SPILL LEAK AND DISPOSAL PRACTICES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Cleanup personnel must wear proper protective equipment (refer to Section VII). Reclaim into closed containers for possible normal use or disposal. Can be flushed and dissolved with water if properly contained for collection and disposal. Avoid contamination of ground and surface waters. Do not flush to sewer.

WASTE DISPOSAL METHOD

Recovered solids or liquids may be sent to a licensed reclaimer or disposed of in a permitted waste management facility. Consult federal, state, or local disposal authorities for approved procedures.

X - TRANSPORTATION

DOT HAZARD CLASSIFICATION

Corrosive

PLACARD REQUIRED

Corresive

LABEL REQUIRED

Corrosive. Label as required by OSHA Hazard Communication Rule, 29 CFR, Part 1910.1200 (f), and any applicable state and local regulations.

For Further Information

Contact Vulcan Chemicals
Technical Service Department
P.O. Box 7689
Birmingham, AL 35253-0689
205/877-3459
8 AM to 5 PM Central Time
Monday Through Friday
For Emergency Information Call: 316/524-5751 (24 hours)

DATE OF PREPARATION: October 1, 1985

NOTICE: Vulcan Chemicals believes that the information contained on this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules or insurance requirements.

Industrial Unemicals Group Diamond Shamrock Corporation 351 Pheips Court P.O. Box 2300 Irving, Texas 75061 214/659-7000

Material Safety

DBC-2030



(1974)

Occupationally Hazardous Materials"

ۆ

System

on NIOSH "Identification Hoalth Hazard

based

Ratings

Diamond Shamrock

GENERAL INFORMATION Anhydrous Caustic Potash is a white. hygroscopic corrosive solid with no distinct odor.

- 0 R-1 2P.D

DEPARTMENT OF TRANSPORTATION INFORMATION PROPER SHIPPING NAME: Caustic Potash, dry I.D. NUMBER: UN 1813

HAZARD CLASS: Corrosive Material HAZARDOUS SUBSTANCE: RQ-1.000

PRODUCT IDENTIFICATION

Manufacturer's Name DIAMOND SHAMROCK CORPORATION

Regular Telephone No. Contact Local Sales Office Emergency Telephone No. 216/357-7070

Industrial Chemicals Technical Center P.O. Box 191 Painesville, Ohio 44077

Product Name

Caustic Potash - Anhydrous

Synonyms

Potassium Hydroxide; KOH

II HAZARDOUS INCREDIENTS

Material or component

CAS No.

Hazard Data

Potassium Hydroxide

1310-58-3

PEL - None

100

= 2 mg/m , Ceiling Value

*Chemical Abstract Service Number

*OSHA Permissible Exposure Limit

ACCIH Threshold Limit Value, 1982

III PHYSICAL DATA

Boiling Point, 760 mm Hg 1320°C; 2408°F Melting Point
Not Applicable

Freezing Point 400°C, 752°F

Specific Gravity (H₂0=1) 2.044 @ 20°C Vapor Pressure 60 mm Hg @ 1013°C

Vapor Density (Air=1) Not Applicable Solubility in H₂O, % by Wt. Completely Soluble

% Volatiles by Vol.
Not Volatile

Evaporation Rate (Butyl Acetate=1)
 Not Applicable

Appearance and Order Clear with no odor Density at 20°C: Not Available

pН

0.01 moles/liter has pH 12.0

IV FIRE AND EXPLOSION DATA

DEVELOP EMERGENCY ACTION PLAN

Flash Point (Test Method)
None

Autoignition Température Nonflammable

Flammable Limits in Air, % by Vol.

Lower Nonflammable

Upper

Nonflammable

Extinguishing Media

Caustic Potash-Anhydrous is not combustible.

Special Fire Fighting Procedures

Avoid direct contact of Caustic Potash-Anhydrous with water.

Unusual Fire and Explosion Hazard None

V HEALTH HAZARD INFORMATION

Health Hazard Data

Potassium Hydroxide: Acute Oral $LD_{50} = 365 \text{ mg/kg}$ (Rat)

Routes of Exposure

Inhalation

Airborne concentrations of dust, mist, or spray may cause damage to the upper-respiratory tract and even to the lung tissue proper which could produce chemical pneumonia, depending upon severity of exposure.

Skin Contact

Caustic Potash is destructive to tissues contacted and produces severe burns.

Skin Absorption

See "Skin Contact" above.

Eye Contact

Caustic Potash is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness.

Ingestion

Caustic Potash, if swallowed, can cause severe burns and complete tissue perforation of mucous membranes of the mouth, throat, esophagus, and stomach.

Effects of Overexposure

Acute Overexposure

Corrosive to all body tissues with which it comes in contact.

Chronic Overexposure

The chronic local effect may consist of multiple areas of superficial destruction of the skin or of primary irritant dermatitis. Similarly, inhalation of dust, spray, or mist may result in varying degrees of irritation or damage to the respiratory tract tissues and an increased susceptibility to respiratory illness.

Emergency and First Aid Procedures

Eyes:

CBICT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN SEEK MEDICAL ATTENTION. IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately.

Skin:

Immediately wash contaminated areas with plenty of water. Remove contaminated clothing and footwear and wash clothing before reuse. Discard footwear which cannot be decontaminated. Seek medical attention immediately.

Inhalation:

Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

Ingestion:

NEVER give anything by mouth to an unconscious person. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep airway clear. Seek medical attention immediately.

Notes to Physician

VI REACTIVITY DATA

Conditions Contributing to Instability

Under normal conditions, the material is stable.

Incompatibility

Avoid direct contact with water. Caustic Potash-Anhydrous may be added slowly to water or acids with dilution and agitation to avoid a violent reaction. When handling Caustic Potash-Anhydrous, avoid contact with aluminum, tin, zinc and alloys containing these metals. Do not mix with strong acids without dilution and agitation to prevent violent or explosive reaction. Avoid contact with leather or wool.

Hazardous Decomposition Products

Conditions Contributing to Hazardous Polymerization Material is not known to polymerize.

VII SPILL OR LEAK PROCEDURES

DEVELOP SPILL PLAN

Steps to be Taken if Material is Released or Spilled

Clean up spills immediately by sweeping or shoveling up the material. Neutralize remaining traces of material with any dilute inorganic acid such as hydrochloric, sulfuric, nitric, phosphoric, and acetic acid. The spill area should then be flushed with water followed by liberal covering of sodium bicarbonate. All clean-up material should be removed and placed in approved containers to await proper treatment or disposal. Spills on areas other than pavement, e.g., dirt or sand, may be handled by removing the affected soils and placing in approved containers. Persons performing clean-up work should wear adequate personal protective equipment and clothing.

Caution: Anhydrous Caustic Potash may react violently with acids and water.

Waste Disposal Method

The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable Federal, State, and local health environmental regulations. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible Federal, State, and local agencies receive proper notification of spill and disposal of waste.

VIII INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements

Use adequate local exhaust ventilation.

Note: Where carbon monoxide may be generated, special ventilation may be required.

Specific Personal Protective Equipment

Respiratory (Specify in Detail)

Respiration protection is not required under normal use.

Eve

Face shield and gogglès or chemical goggles should be worn.

Gloves

Gloves should be worn. Consult the manufacturer for most appropriate glove material. Gloves may be decontaminated by washing with mild soap and water.

Other Clothing and Equipment

Coveralls closed to the neck. Chemically-resistant safety shoes. Wash contaminated clothing with soap and water and dry before reuse. Safety showers and eyewash stations should be provided in all areas in which Caustic Potash is handled.

IX SPECIAL PRECAUTIONS

Precautionary Statements

DANCER!

CAUSES SEVERE BURNS TO SKIN AND EYES.

DO NOT get in eyes, on skin, on clothing.

Avoid breathing dust, mist, or spray.

DO NOT take internally.

Use with adequate ventilation and employ respiratory protection when exposure to dust, mist, or spray

When handling, we ar chemical splash goggles, face shield, rubber gloves, and protective clothing.

Wash thoroughly after handling.

Avoid contact with strong acids to prevent violent or explosive reactions.

Keep container closed.

First Aid:

In case of contact:

For eyes: Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire eye surface. Seek medical attention immediately.

For skin: Immediately wash with plenty of water. Remove contaminated clothing and footwear. Wash clothing before reuse and discard footwear which cannot be decontaminated. attention immediately.

If inhaled: Remove person out of contaminated area to fresh air. If breathing has stopped, artificial respiration should be started. Oxygen may be administered, if available. Seek medical attention immediately.

If swallowed: DO NOT induce vaniting. Give large quantities of water. If available, give several glasses of milk. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

In Case of Fire: N/A

In Case of Spill or Leak: Leaks should be stopped. Spills, after containment, should be shoveled up or removed by vacuum truck (if liquid) to chemical waste area. Neutralize residue with dilute acid, flush spill area with water followed by liberal covering of sodium bicarbonate. Dispose of wash water and spill by-products according to Federal, State, and local regulations.

Other:

Special instructions for dissolving caustic soda:

When making solution, always add slowly to liquid surface with constant stirring. Never add the liquid to the caustic potash.

Always start with lukewarm liquid (80°-100°F). Never start with hot or cold liquid.

If caustic potash becomes concentrated in one area, or if added too rapidly, or if added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS boiling and/or spattering, which may cause an immediate VIOLENT ERUPTION.

For Industrial Use Only

Other Handling and Storage Requirements

STORAGE AND DISPOSAL

Storage

Considerable heat is generated when water is added to caustic potash; therefore, when making solutions, always add the caustic potash to the water with constant stirring. The water should always be lukewarm (80°-100°F). Never start with hot or cold water. If caustic potash becomes concentrated in one area, or if added too rapidly or added to hot or cold water, a rapid temperature increase can result in DANCEROUS BOILING and/or spattering or may cause an immediate VIOLENT ERUPTION. Caustic potash can react violently or explosively with acids and many organic chemicals.

Caustic potash reacts with reducing sugars such as fructose, lactose, maltose, galatose, levulose, and arabinose to form carbon monoxide. While the potential for worker exposure to carbon monoxide may be small, a potential does exist during cleaning of certain dairy and possibly other industry equipment.

Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all Federal, State, and DOT regulations. All residual caustic potash should be removed from containers prior to disposal.

More information on the hazards and handling of caustic potash appear in Diamond Shamrock Corporation's Potash Handbook EC-CP-1b.

Disposal

The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable Federal, State, and local health environmental regulations. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible Federal, State, and local agencies receive proper notification of disposal.

All information recommendations and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, ho guarantee, expressed or implied, is made by Diamond Shamrock Corporation as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Diamond Shamrock Corporation assume any liability arising out of use, by others, of the product referred to herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

MATERIAL SAFETY DATA SHEET

DBC- 2100

MSDS NUMBER:

3.3.5

M1182



PRODUCT NAME: CAUSTIC POTASH

-LIQUID

MSDS DATE:

11/05/85

24 HOUR EMERGENCY PHONE: (214) 922-2700

I. PRODUCT IDENTIFICATION

3 HEALTH HAZARD, 0 FIRE HAZARD, & 1 REACTIVITY rating based on NIOSH "Identification System for Occupationally Hazardous Materials" (1974)

MANUFACTURER'S NAME AND ADDRESS: Diamond Shamrock Chemicals Company. Chlor-Alkali Division, 351 Phelps Court, P.O. Box 152300, Irving, Texas 75015-2300

CHEMICAL NAME: Potassium Hydroxide

CAS NUMBER:

1310-58-3

SYNONYMS/COMMON NAMES: Potassium Hydroxide; KOH

CHEMICAL FORMULA: KOH

DOT PROPER SHIPPING NAME: Caustic Potash, Liquid

DOT HAZARD CLASS: Corrosive Material

DOT I.D. NUMBER:

UN1814

HAZARDOUS SUBSTANCE: RQ 1000

II. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT

HAZARD DATA

CAS NUMBER

Potassium Hydroxide

PEL = None Established TLV = 2 mg/m³ Ceiling Value

1310-58-3

45 55

Water

(See Section V)
The materials in this product are listed in the TSCA Inventory.

III. PHYSICAL DATA

BOILING POINT @ 760 mm Hg: 133°C

VAPOR DENSITY (Air=1): NA

% VOLATILES BY VOL .: Not Volatile

FREEZING POINT: -29°C (-20°F)

VAPOR PRESSURE: 39 mm Hg @ 60°C EVAPORATION RATE (BUAC=1): NA

SPECIFIC GRAVITY (H20=1): 1.45 @ 15.6°C

SOLUBILITY IN H2O % BY WT: Completely Soluble

VISCOSITY: 3.7 Centipoises -(45%)

APPEARANCE AND ODOR: Clear with no odor

0.01 moles/liter has pH 12.0

CAS . Chemical Abstract Service Number PEL + OSHA Permissible Exposure Limit TLV . TLV . ACGIH Threshold Limit Value, Current N/A + No relevant information found or not available NA . Not Applicable

Diamond Shamrock Chemicals Company - A subsidiary of Diamond Shamrock

This Material Safety Data Sheet was prepared in accordance with 29 CFR 1910-1200. All information, recommendations and auggestions appearing herein concerning out product are based upon tests and data believed to be reliable; however it is the user's responsibility to determine the safety. Idazcity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made by Diamond Shamrock Chemicals Company as to the effects of such use the results to be obtained or the safety and toxicity of the product nor does Diamond Shamrock Chemicals Company assume any liability erising out of use by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or povernment regulations

Page 2 of 4 11/05/85

IV. FIRE AND EXPLOSION DATA

FLASH POINT: None AUTOIGNITION TEMPERATURE: Nonflammable FLAMMABLE LIMITS IN AIR, % BY VOLUME- UPPER: Nonflammable

LOWER: Nonflammable

EXTINGUISHING MEDIA: This product is not combustible. SPECIAL FIRE FIGHTING PROCEDURES: Avoid direct contact of product with water

UNUSUAL FIRE AND EXPLOSION HAZARD:

V. HEALTH HAZARD INFORMATION

HEALTH HAZARD DATA:

Potassium Hydroxide: Acute Oral LD50 = 365 mg/kg (rat)

ROUTES OF EXPOSURE

cause damage to the upper-respiratory tract and even to the lung tissue proper which could produce chemical pneumonia, depending upon severity of exposure.

SKIN CONTACT: This product is destructive to tissues contact.

produces severe burns. SKIN ABSORPTION: See Skin Contact above.

EYE CONTACT: This product is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness.

GESTION: This product, if swallowed, can cause severe burns and complete tissue perforation of mucous membranes of the mouth, INGESTION: throat, esophagus and stomach.

ACUTE: Corrosive to all body tissues with which it comes in contact. CHRONIC: The chronic local effect may consist of multiple areas of superficial destruction of the skin or of primary irritant dermatitis. Similarly, inhalation of dust, spray, or mist may result in varying degrees of irritation or damage to the respiratory tract tissues and an increased susceptibility to respiratory illness.

EMERGENCY AND FIRST AID PROCEDURES

EYES: OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN SEEK MEDICAL ATTENTION. IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately. SKIN: Wash contaminated areas with plenty of water for 15 minutes. Remove contaminated clothing and footwear and wash clothing before reuse. Discard footwear which cannot be decontaminated. Seek

reuse. Discard footwear which cannot be decontaminated. Seek medical attention immediately.

INHALATION: Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

INGESTION: NEVER give anything by mouth to an unconscious person. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep airway clear. Seek medical attention immediately. immediately.
NOTES TO PHYSICIAN:

None.

VI. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY: Under normal conditions, the material is stable.

contact with water. INCOMPATIBILITY: Avoid direct This product may be added slowly to water or acids with dilution and agitation to When handling this product, avoid avoid a violent reaction. contact with aluminum, tin, zinc, and alloys containing these metals. Do not mix with strong acids without dilution and agitation to prevent violent or explosive reaction. Avoid contact with leather or wool. HAZARDOUS DECOMPOSITION PRODUCTS:

None. CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Material is not known to polymerize.

3000 B

PRODUCT NAME: CAUSTIC POTASH-LIQUID Page 3 of 4 11/05/85

VII. ENVIRONMENTAL PROCEDURES

ILLS OR RELEASES: If a material is spilled or released to the atmosphere, steps should be taken to contain liquids and prevent SPILLS OR RELEASES: discharges to streams or sewer systems and control or stop the loss of volatile materials to the atmosphere. Spills or release should be reported, if required, to the appropriate local, state and federal regulatory agencies.

DISPOSAL OR STORAGE: Clean-up action should be carefully planned and executed. Shipment, storage, and/or disposal of waste materials are regulated and action to; handle spilled or released materials must meet the applicable rules. If any question exists, the appropriate agencies should be contacted to assure proper action being taken.

VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

VENTILATION REQUIREMENTS:

Use adequate local exhaust ventilation.

Note: Where carbon monoxide may be generated, special ventilation may be required.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: Respiratory protection is not required under normal Use NIOSH/MSHA approved respirators where dust or mist may be use. generated.

EYE: Face shield and goggles or chemical goggles should be worn.

GLOVES: Rubber gloves should be worn. Gloves may be decontaminated by washing with mild soap and water.

OTHER CLOTHING AND EQUIPMENT: Protective clothing to minimize skin contact should be worn. Chemically-resistant safety shoes. Wash contaminated clothing with soap and water and dry before reuse. Safety showers and eyewash facilities should be provided in all areas in which this product is handled.

IX. SPECIAL PRECAUTIONS

SIGNAL WORD: DANGER!

STATEMENT OF HAZARDS:

ATEMENT OF HAZARDS:
CAUSES SEVERE BURNS TO SKIN AND EYES
CONTACT WITH EYES CAN CAUSE PERMANENT EYE DAMAGE
INHALATION OF DUST, MIST OR SPRAY CAN CAUSE SEVERE LUNG DAMAGE

PRECAUTIONARY STATEMENTS:

Do not get into eyes, on skin, on clothing. Avoid breathing dust, mist, or spray.

Do not take internally.

Use with adequate ventilation and employ respiratory protection when exposure to dust, mist or spray is possible. When handling, wear chemical splash goggles, fac

face shield, rubber gloves and protective clothing.

Wash thoroughly after handling or contact exposure can cause burns which are not immediately painful or visible. Keep container closed.

Product can react violently with water, acids, and other substances - read Special Mixing and Handling Instructions below carefully before using.

IX. SPECIAL PRECAUTIONS

...continued

FIRST AID:

IN CASE OF CONTACT:

- For eyes: <u>Immediately</u> flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire eye surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately.
- For skin: Immediately wash with plenty of water for 15 minutes. Remove contaminated clothing and footwear. Wash clothing before reuse and discard footwear which cannot be decontaminated. Seek medical attention immediately.
- IF INHALED: Remove person out of contaminated area to fresh air. If breathing has stopped, artificial respiration should be started. Oxygen may be administered, if available. Seek medical attention immediately.
- IF SWALLOWED: Do not induce vomiting. Give large quantities of water. If available, give several glasses of milk. Never give anything by mouth to an unconscious person. Seek medical attention immediately.
- IN CASE OF SPILL OR LEAK: Leaks should be stopped. Spills, after containment, should be shoveled up or removed by vacuum truck (if liquid) to chemical waste area. Neutralize residue with dilute acid, flush spill area with water followed by liberal covering of sodium bicarbonate. Dispose of wash water and spill by-products according to federal, state, and local regulations.
- SPECIAL MIXING AND HANDLING INSUTRUCTIONS: Considerable heat is generated when water is added to caustic potash; therefore, when making solutions always add the caustic potash to the water with constant stirring. The water should always be lukewarm (80°-100°F). Never start with hot or cold water. If caustic potash becomes concentrated in one area, or if added too rapidly, or if added to hot or cold water, a rapid temperature increase can result in DANGEROUS BOILING and/or spattering or may cause an immediate VIOLENT ERUPTION.
 - When handling product, avoid contact with aluminum, tin, zinc, and alloys containing these metals.
 - Caustic potash can react violently or explosively with acids and many organic chemicals when mixing caustic potash with such chemicals, add very gradually while agitating to prevent violent or explosive reaction.
 - Caustic potash reacts with reducing sugars such as fructose, lactose, maltose, galactose, levulose, and arabinose to form carbon monoxide. While the potential for worker exposure to carbon monoxide may be small, a potential does exist during cleaning of certain dairy and possibly other industry equipment, and special ventilation may be required.
 - Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal, state, and DOT regulations. All residual caustic potash should be removed from containers prior to disposal.
 - More information on the hazards and handling of caustic potash appear in Diamond Shamrock Corporation's Material Safety Data Sheet (MSDS) M1182 and caustic potash handbook EC-CP-1b.
- DISPOSAL: The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable federal, state, and local health environmental regulations. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible federal, state, and local agencies receive proper notification of disposal.

JATA SHEET



Diamond Shamrock Chemicals Company

H-3 F-0 2-1

MSDS NUMBER:

M1184

DAC-2200

CAUSTIC SODA- 2201 PRODUCT NAME:

LIQUID

MSDS DATE: OCTOBER 4, 1985

24 HOUR EMERGENCY PHONE: (214) 922-2700

I. PRODUCT IDENTIFICATION

3 HEALTH HAZARD, 0 FIRE HAZARD, & 1 REACTIVITY rating based on NIOSH "Identification System for Occupationally Hazardous Materials" (1974)

MANUFACTURER'S NAME AND ADDRESS: Diamond Shamrock Chemicals Company, Chlor-Alkali Division, 351 Phelps Court, P.O. Box 152300,

Irving, Texas 75015-2300 CHEMICAL NAME: Sodium Hydroxide

CAS NUMBER:

1310-73-2

SYNONYMS/COMMON NAMES: Sodium Hydroxide; NaOH

UN 1824

CHEMICAL FORMULA: NaOH

DOT PROPER SHIPPING NAME: Caustic So DOT HAZARD CLASS: Corrosive Material Caustic Soda, Liquid

HAZARDOUS SUBSTANCE:

RO-1000

II. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT HAZARD DATA CAS NUMBER PEL = 2 mg/m^3 TLV = 2 mg/m^3 Sodium Hydroxide 1310-73-2 50 Cetling Water See Section V 7732-18-5 50 This material is listed in the TSCA Inventory.

III. PHYSICAL DATA

DOT I.D. NUMBER:

BOILING POINT @ 760 mm Hg: 14 FREEZING POINT: 12.1°C (54°F) 143°C VAPOR DENSITY (Air=1):

VAPOR PRESSURE: VAPOR PRESSURE: 13 mmHg @ 60°C SPECIFIC GRAVITY (H20=1): 1.54 SOLUBILITY IN H20 % BY WT: Com % VOLATILES BY VOL.: <50%

1.54 @ 15.6°C

Completely Soluble

APPEARANCE AND ODOR:

Clear with no cdor 7.5% solution has pH 14.0

IV. FIRE AND EXPLOSION DATA

FLASH POINT: NA AUTOIGNITION TEMPERATURE: Nonflammable FLAMMABLE LIMITS IN AIR, % BY VOLUME - UPPER: Nonflammable LOWER: Nonflammable

EXTINGUISHING MEDIA:

This product is not combustible. Water spray, foam, carbon dioxide or dry chemicals may be used where this product is stored. SPECIAL FIRE FIGHTING PROCEDURES:

Protective clothing and pressure-demand self-contained breathing apparatus should be worn by firefighters in areas where product is stored.

UNUSUAL FIRE AND EXPLOSION HAZARD:

None.

CAS - Chemical Abstract Service Number PEL + OSHA Permissible Exposure Limit TLV . TLV. ACGIM Threshold Limit Value, Current

N.A.*.No relevant information found or not available NA . Not Applicable

OLP 12 12 25

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This Material Safety Data Sheet was prepared in accordance with 29 CFR 1910-1200. All information, recommendations and suggestions appearing herein concerning our product are based upon tests and data believed to be reliable, however, it is the user's responsibility to determine the safety. Disicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made by Diamond Shemrock Chemicals Company as to the effects of such use the results to be obtained or the safety and toxicity of the product nor does Diamond Shamrock Chemicals Company assume any liability arising out of use by others of the product referred to herein. Not is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable taws or government regulations

V. HEALTH HAZARD INFORMATION

HEALTH HAZARD DATA:

Caustic Soda is a corrosive material. Sodium Hydroxide: Acute Oral LD50

Acute Oral LD50 = 140-340 mg/kg (rat)
Acute Dermal LD50 = 1.35 gm/kg (rabbit)
ROUTES OF EXPOSURE

INHALATION:

Airborne concentrations of dust, mist, or spray of caustic soda may cause damage to the upper respiratory tract and even to the lung tissue proper which could produce chemical pneumonia, depending upon severity of exposure. SKIN CONTACT:

This product is destructive to tissues contacted and produces severe burns.

SKIN ABSORPTION:

See "Skin Contact".

EYE CONTACT:

This product is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness. INGESTION:

tissue perforation of much esophacies swallowed, can cause severe burns and complete of mucous membranes of the mouth, throat, esophagus and stomach. EFFECTS OF OVEREXPOSURE

ACUTE:

Corrosive to all body tissues with which it comes in contact.

CHRONIC:

The chronic local effect may consist of multiple areas of superficial destruction of the skin or of primary irritant dermatitis. Similarly, inhalation of dust, spray, or mist may result in varying degrees of irritation or damage to the respiratory tract tissues and an increased susceptibility to respiratory illness.

EMERGENCY AND FIRST AID PROCEDURES

OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN SEEK MEDICAL ATTENTION. IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately. SKIN:

Wash contaminated areas with plenty of water for 15 minutes. Remove contaminated clothing and footwear and wash clothing before reuse. Discard footwear which cannot be decontaminated. Seek medical attention immediately. INHALATION:

Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately. INGESTION:

NEVER give anything by mouth to an unconscious person. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep atrway clear. Seek medical attention immediately.

VI. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY:

Under normal conditions, this material is stable. INCOMPATIBILITY:

Avoid direct contact with water. Caustic Soda - Liquid may be added slowly to water or acids with dilution and agitation to avoid a violent reaction. When handling Caustic Soda, avoid contact with aluminum, tin, zinc, and alloys containing these metals. Do not mix with strong acids without dilution and agitation to prevent violent or explosive reaction. Avoid contact with leather or wool. HAZARDOUS DECOMPOSITION PRODUCTS:

None. CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION Material is not known to polymerize.

Page_3 of 4 MSDS NÚMBÉR : M1184 10/04/85 PRODUCT NAME: CAUCTIC SODA LIGUIS

VII. ENVIRONMENTAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Leaks should be stopped. Spills should be contained and cleaned up immediately. Spills should be removed by using a vacuum truck. Neutralize remaining traces of material with any dilute inorganic acid such as hydrochloric, sulfuric, nitric, phosphoric, and acetic acid. The spill area should then be flushed with water followed by liberal covering of sodium bicarbonate. All clean-up material should be removed and placed in approved containers, labeled and stored in a safe place to await proper treatment or disposal. Spills on areas other than pavement, e.g., dirt or sand, may be handled by removing the affected soils and placing in approved containers. Persons performing clean-up work should wear adequate personal protective equipment and clothing.

Caustic Soda may react violently with acids and water. Caution:

WASTE DISPOSAL METHOD:

The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable federal and any state, and local health and environmental regulations. Shipments of waste materials may be subject to manifesting requirements applicable regulations. Appropriate disposal will depend on requirements per nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible federal, state, and local agencies receive proper notification of spill and disposal methods.

VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

VENTILATION REQUIREMENTS:

Use adequate local exhaust ventilation where mist, sprays or resuspended dust may be generated. NOTE: Where carbon monoxide may be generated, special ventilation may be required.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY:

Respiration protection is not required under normal use. Use NIOSH/MSHA approved respirator where mists, sprays or resuspended dust may be generated. Follow manufacturers recommendations.

Face shield and goggles or chemical goggles should be worn. GLOVES:

Gloves should be worn. Gloves may be decontaminated by washing with mild soap and water. Natural and butyl rubber have been suggested.

OTHER CLOTHING AND EQUIPMENT: Protective clothing to minimize skin contact. Chemically resistant Wash contaminated clothing with soap and water and dry Showers and eyewash facilities should be accessible. safety shoes. before reuse. MONITORING EXPOSURE

BIOLOGICAL:

PERSONAL/AREA:

NIOSH P & CAM (Method) 241, S381.

DK. SPECIAL PRECAUTIONS

SIGNAL WORD: DANGERI STATEMENT OF HAZARDS:

CAUSES SEVERE BURNS TO SKIN AND EYES

CONTACT WITH EYES CAN CAUSE PERMANENT EYE DAMAGE

INHALATION OF DUST, MIST OR SPRAY CAN CAUSE SEVERE LUNG DAMAGE. PRECAUTIONARY STATEMENTS:

Do not get into eyes, on skin, on clothing. Avoid breathing dust, mists, or spray.

Do not take internally.

Use with adequate ventilation and employ respiratory protection when exposure to dust, mist or spray is possible.

When handling, wear chemical splash goggles, face shield, rubber gloves and protective clothing.

Wash thoroughly after handling or contact - expos burns which are not immediately painful or visible. exposure can cause

IX. SPECIAL PRECAUTIONS

...continued

PRECAUTIONARY STATEMENTS:

Product can react violently with water, acids, and other substances - read special mixing and handling instructions below carefully before using.

Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures (ANSI Z117.1-1977). FIRST AID:

IN CASE OF CONTACT:

For eyes:

Immediately flush with plenty of water for at least 15 minutes. holding eyelids apart to ensure flushing of the entire eye surface. Washing eyes within one minute is essential to achieve maximum effectiveness. Seek medical attention immediately. For skin:

Immediately wash with plenty of water. Remove contaminated clothing and footwear. Wash clothing before reuse and discard footwear which cannot be decontaminated. Seek medical attention immediately.

IF INHALED:

Remove person out of contaminated area to fresh air. If breathing has stopped, artificial respiration should be started. Oxygen may be administered, if available. Seek medical attention immediately. IF SWALLOWED:

Do not induce vomiting. Do not induce vomiting. Give large quantities of water. If available, give several glasses of milk. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

IN CASE OF SPILL OR LEAK:

Leaks should be stopped. Spills, after containment, should be shoveled up or removed by vacuum truck (if liquid) to chemical waste area. Neutralize residue with dilute acid, flush spill area with water followed by liberal covering of sodium bicarbonate. Dispose of wash water and spill by-products according to federal, state, and local regulations. SPECIAL MIXING AND HANDLING INSTRUCTIONS:

Considerable heat is generated when water is added to caustic soda; therefore, when making solutions always add the caustic soda to the water with constant stirring. The water should always be lukewarm (80°-100°F). Never start with hot or cold water. If caustic soda becomes concentrated in one area, or if added too rapidly, or if added to hot or cold water, a rapid temperature increase can result in DANGEROUS BOILING and/or spattering or may cause an immediate VIOLENT ERUPTION.

When handling product, avoid contact with aluminum, tin, zinc, and alloys containing these metals.

Caustic soda can react violently or explosively with acids and many organic chemicals - when mixing caustic soda with such chemicals, add very gradually while agitating to prevent violent or reaction.

Caustic soda reacts with reducing sugars such as fructose, lactose, maltose, galactose, levulose, and arabinose to form carbon monoxide. While the potential for worker exposure to carbon monoxide may be small, a potential does exist during cleaning of certain dairy and

possibly other industry equipment.
Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal, state, and DOT regulations. All residual caustic soda should be removed from containers prior to disposal.

More information on the hazards and handling of caustic soda appear in Diamond Shamrock Corporation's Material Safety Data Sheet (MSDS) M1184 and caustic soda handbook EC-LDC-1c. DISPOSAL:

The materials resulting from clean-up operations may be makerious wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable federal, state, and local health environmental regulations. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent The materials resulting from clean-up operations may be hazardous nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible federal, state, and local agencies receive proper notification of disposal

DBC-2500

Material Safety Data Sheet

 $H \cdot 1$

F. 0 R. 0

Essentially similiar to OSHA-20

	-		Sect	ion I				
MANUFACTURER'S NAME ENGELHARD CORPORATION SPECIALTY CHEMICALS DIVISION			EMERGENCY TELEPHONE NUMBER (201) 321-5000				ER	
ADDRESS (Number, Street, City, State and ZIP Code)				C.A.S. No.: 471-34-1				
MENLO PARK CN 28, EDISON, NJ 08818			ECOIN No.: 129278					
CHEMICAL NAME AND SYNONYMS			TRADE NAME AND SYNONYMS					
CALCIUM CARBONATE, WHITING			CHEM CARB® PRODUCTS					
CHEMICAL FAMILY				FORMULA				
GROUND LIMESTONE				CaCO ₃				
	Section	11 —	HAZARI	OUS INGREDIE	NTS			
	PAINTS	S, PRI	ESERVA	TIVES & SOLVEN	ITS			
PIGMENTS		%	TLV (Units)	SOLVENTS			%	TLV (Units)
N.A.					N.A.			
				·				
JATALYST				ADDITIVES				
N.A.					N.A.			
VEHICLE				OTHERS				
N.A.	· ·				N.A.	•		
	Se	ection	III — P	HYSICAL DATA				
BOILING POINT (°F)		N.A.		SPECIFIC GRAVITY (H20	O =1)		2.71	
VAPOR PRESSURE (mm Hg.)		N.A.		PERCENT VOLATILE BY VOLUME (%)			N.A.	
VAPOR DENSITY (AIR =1)		N.A.		EVAPORATION RATE			N.A.	
SOLUBILITY IN WATER		N.A.						
APPEARANCE AND ODOR	WHITE OD	WHITE ODORLESS POWDER						
						-		
S	ection IV —	FIRE	AND EX	(PLOSION HAZAI	RD DATA			
FLASH POINT (METHOD USED) N.A.			FLAMMABLE LIMITS	N.A.	Let		Uel	
EXTINGUISHING MEDIA NON-F	LAMMABLE							
ECIAL FIRE FIGHTING PROCEDU	JRES N.A.							

					. •
	Sect	ion V —	HEALTH HAZA	RD DATA	
THRESHOLD LIMIT VALUE	E CALCIUM CARBON	ATE IS CLAS	SIFIED AS A NUISANO	E DUST BY THE AMERICAN CONFERENC	E OF
GOVERNMENTAL INDUS	STRIAL HYGIENISTS (ACC	GIH) WITH A	TLV OF 10mg/m' TOT	AL DUST OR 5mg/m³ RESPIRABLE FRACT	ION (PER THEIR
185 PUBLICATION).					. (.
1					
EFFECTS OF OVEREXPOS	SURE PROLONGED A	ND CONTINU	JOUS EXPOSURE TO	AN EXCESSIVE CONCENTRATION OF DUS	T OF ANY KIND.
INCLUDING CALCIUM C	ARBONATE MAY HAVE AN	ADVERSE	PULMONARY EFFECT	ON SOME PEOPLE.	
:			· · · · · · · · · · · · · · · · · · ·		
EMERGENCY FIRST AID F	PROCEDURES NO SPE	CIAL FIRST	AID IS REQUIRED. C	DNSULT A PHYSICIAN IF A QUESTION AR	ISES.
	S	ection VI	- REACTIVIT	Y DATA	
STABILITY	UNSTABLE		CONDITIONS TO AV	OID N.A.	
	STABLE	x			
INCOMPATABILITY (Mate	erials to avoid) REACTS	WITH ACIE)S		·
HAZARDOUS DECOMPOS	SITION PRODUCTS				· · · · · · · · · · · · · · · · · · ·
TIAZANDOOS DECOMITO					
		· · · · · · · · · · · · · · · · · · ·			
HAZARDOUS POYMERIZATION	MAY OCCUR		CONDITIONS TO AV	OID N.A.	·····
	WILL NOT OCCUR	X			
	Section	VII — SF	ILL OR LEAK	ROCEDURES	
STEPS TO BE TAKEN IN	CASE MATERIAL IS RELE	ASED OR SP	PILLED VACUUM O	R SCOOP UP THE SPILLED MATERIAL IN	A CONTAINER
FOR RECLAMATION OR	DISPOSAL.				
					(
WASTE DISPOSAL METH	OD RAW (UNUSED) M	IATERIAL M	AY BE DISPOSED OF	N A SANITARY LANDFILL, HOWEVER, SPE	ENT MATERIAL
MAY BE CONTAMINATE	D AND MAY REQUIRE SP	ECIAL DISP	OSAL METHODS. CO	ISULT WITH APPROPRIATE REGULATOR	Y AUTHORITIES
	Section VIII -	- SPECI	AL PROTECTI	ON INFORMATION	
RESPIRATORY PROTECT	ION (Specify type) NIC	OSH APPRO	VED PARTICULATE R	SPIRATOR	
VENTILATION	LOCAL EXHAUST	X		SPECIAL	· · · · · · · · · · · · · · · · · · ·
	MECHANICAL (General	<u> </u>		OTHER	· · · · · · · · · · · · · · · · · · ·
PROTECTIVE GLOVES	NONE		EYE PROTE		
OTHER PROTECTIVE EQ	UIPMENT NONE		· · · · · · · · · · · · · · · · · · ·		

Section IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING MINIMIZE DUST GENERATION AND EXPOSURE.

OTHER PRECAUTIONS

Section X — DEPT. OF TRANSPORTATION (DOT) CLASSIFICATION

PROPER SHIPPING NAME

CALCIUM CARBONATES LIMESTONE GROUND, OF WHICH 80% WILL PASS THROUGH A U.S. #8 SCREEN STANDARD TRANSPORTATION COMMODITY CODE (STCC)

32-959-50

HAZARDOUS MATERIAL CLASSIFICATION

NONE



MATERIAL SAPETY F-0 DATA SHEET

R-0

SODIUM MOLYBDATE (Crystalline)

PP-A DBC 4017

PRODUCT IDENTITY

EMERGENCY CONTACT

CORP. MANAGER OF INDUSTRIAL HYGI

CHEMICAL NAME: Molybdic Acid, Disodium Salt

TRADE NAME: Sodium Molybdate (Crystalline)

FORMULA: Na₂MoO₄.H₂O CAS NO.: 7631-95-0 PHYSICAL FORM: Powder AMAX INC. AMAX CENTER

GREENWICH, CONNECTICUT 06836 TELEPHONE NO.: (203) 629-7112

COMPOSITION

		1	PERMISSIBLE AIR LEVEL
Molybdenum Trioxide	1313-27-5	59.6	OSHA: 5 mg/m ³ ACGIH: 5 mg/m ³
Sodium	7440-23-5	21.5	
Oxygen	7782-44-7	4.0	•
Water	7782-44-7	14.9	•

HEALTH HAZARD INFORMATION

 $5mg/m^3$ OSHA PERMISSIBLE EXPOSURE LEVEL: ACGIH THRESHOLD LIMIT VALUE: $5mq/m^3$

PRIMARY ROUTE OF ENTRY: Inhalation

YMPTOMS AND EFFECTS OF:

ACUTE OVEREXPOSURE:

May result in eye or respiratory tract irritation.

CHRONIC OVEREXPOSURE:

USSR studies in 1961 & 1966 found signs of gout in factory workers and among inhabitants of molybdenum rich areas of Armenia. However, a 1979 U.S. study found no evidence of molybdenum induced gout.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY THIS MATERIAL:

Chronic respiratory disease, and gout may be aggravated by exposure to this material.

IS THIS MATERIAL CONSIDERED TO BE CARCINOGENIC BY:

NTP?

IARC? No.

OSHA? No

EMERGENCY AND FIRST AID PROCEDURES

a person breathes in a large amount of dust, remove from exposure; if reathing has stopped, perform artificial respiration. Call a physician.

If irritation of the eyes, nose or throat occur, remove from exposure, flush ey with water for 15 minutes and call a physician.

EXPOSURE CONTROL MEASURES

ENGINEERING: Use ventilation to maintain exposure levels within the OSHA limit.

ERSONAL PROTECTIVE EQUIPMENT:

Use a NIOSH/MSHA approved respirator if exposure exceed the OSHA limit. Wear eye protection when

handling material.

REACTIVITY DATA

This material is stable. STABILITY:

INCOMPATABILITY: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

FIRE and EXPLOSION HAZARD DATA

FLASH POINT: Not applicable

FLAMMABLE LIMITS: LEL UEL

EXTINGUISHING MEDIA: Dry chemical or sand.

SPECIAL FIRE FIGHTING PROCEDURES: Wear protective fire fighting clothing

and self contained breathing equipment.

USUAL FIRE AND EXPLOSION HAZARDS: See "Reactivity Data" section above.

*Do not apply

PRECAUTIONS FOR SAFE HANDLING AND USE

PRECAUTIONS FOR HANDLING AND STORAGE: None necessary.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Clean up by vacuuming to minimize dust exposure. Provide clean-up employees with respirators for dusty conditions.

WASTE DISPOSAL METHODS: Dispose of in accordance with federal, state and local laws and regulations.

THIS MATERIAL WAS REPORTED ON THE INITIAL TSCA INVENTORY. NOTE:

PHYSICAL/CHEMICAL CHARACTERISTICS

MELTING POINT: 687°C

SPECIFIC GRAVITY (H2O=1):

VAPOR PRESSURE @ 20°C: essentially 0

SOLUBILITY IN WATER: 56 gm/100cc 0 0°C

ት DEARANCE AND ODOR: White, odorless powder.

> DATE PREPARED: Nov. 14, 1985 DATE REVISED:

BOILING RANGE

VAPOR PRESSURE VAFOR DENSITY

EVAFORATION RATE

WEIGHT PER GALLON

AFFEARANCE-DUOR- WHITE LIQUID

FH - SOLUBILITY- WATER SOLUBLE

FOR COATINGS , RESINS AND RELATED MATERIALS

FACE DATE OF PREPARATION- 1/27/86 DBC. MUNUFACTURER'S NAME : SPRAYLAT CORPORATION : 716 S. COLUMBUS AVE AUDRESS ATT. AUDRESS CITY, STATE : MT VERNON NY 10550 EMERGENCY TELEPHONE NO. DAY: 914-699-3030 NIGHT: 914-699-3030 INFORMATION TELEPHONE NO. DAY: 914-699-3030 NIGHT: 914-699-3030 SECTION I -- FRODUCT IDENTIFICATION MANUFACTURER'S CODE IDENTIFICATION: BS -03 PRODUCT CLASS: PEELABLE COATING TRADE NAME: BOOTH STRIF (ZR-5143) HMIS INFORMATION ** HEALTH- 1 FLAMMABILITY- 0 REACTIVITY- O FERSONAL PROTECTIVE EQUIPMENT- J SECTION II HAZARDOUS INGREDIENTS --- INGREDIENT ----% BY TLV-(TWA) VAFOR WEIGHT FFM MG/M3 MATERIAL DESCRIPTION CAS+ LEL PRESSURE MMHG @68DF *** - THIS PRODUCT CONTAINS PIGMENTS WHICH MAY BECOME A DUST NUISANCE WHEN REMOVED BY ABRASIVE BLASTING, SANDING OR GRINDING. SECTION III FHYSICAL DATA

SEE SECTION II

-N/A

· -N/A

HIGH 212.0 DF LOW 204.8 DF

MATE OF FREPARATION-1/27/80

BOOTH STRIF

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA 1. AMMABILITY CLASSIFICATION OSHA-N/A I:OT'-LOWEST FLASHFOINT T.C -N/A LOWER EXPLOSION LEVEL (LEL) -N/A

EXTINGUISHING MEDIA: ()-FOAM)-ALCOHOL FOAM (X)-C02 (X)-DRY CHEMICAL (X)-WATER FOG)-OTHER -

UNUSAL FIRE AND EXPLOSION HAZARDS: -NONE

SFECIAL FIRE FIGHTING PROCEDURES: Full protective equipment, including self contained breathing apparatus, is needed to protect firefighters from any hazardous combustion products. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure buildup & explosion. If water is used fog nozzles are preferrable.

SECTION V -- HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: NONE

PRIMARY ROUTE(S) OF ENTRY: (X)-DERMAL (X)-INHALATION

(X)-INGESTION

EMERGENCY AND FIRST AID PROCEDURES: NONE

MEDICAL CONDITIONS FROME TO AGGRAVATION BY EXPOSURE: - NOME

SECTION VI -- REACTIVITY DATA

STABILITY: ()-UNSTABLE (X)-STABLE HAZARDOUS FOLYMERIZATION ()-MAY OCCUR (X)-WILL NOT OCCUR HAZARDOUS DECOMPOSITION FRODUCTS: The dry solid at 100 C exposure for several hours may result in release of organic aldehydes and also organic acids and carbon monoxide in absence of oxygen. WIITIONS TO AVOID: Keep from freezing.

COMPATIBILITY (MATERIALS TO AVOID): Strong exidizing agents.

SECTION VII SFILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike & contain spill with inert material & transfer the material to containers for recovery or disposal. Keep spill out of sewers & open bodies of water. Floors may be slippery.

WASTE DISFOSAL METHOD: Dispose of in accordance with federal, state & local environmental control regulations. Incinerate in approved facility. Do not Incinerate closed containers.

SECTION VIII-- SAFE HANDLING AND USE INFORMATION RESPIRATORY FROTECTION: In outdoor areas use NIOSH approved mechanical filter respirator to remove solid airborne particles of overspray during spray application. In restricted ventilation areas use NIOSH approved chemical-mechanical filters designed to remove a combination of particulate & vapor. In confined areas use NIOSH approved air line type respirators or hoods.

VENTILATION: Provide general dilution or local exhaust ventilation in volume & pattern to keep TLV of most hazardous ingredient below acceptable limit, to keep LEL below stated limit & to remove decomposition products formed during welding or flame cutting on surface coated with this material PROTECTIVE EQUIPMENT: Protective gloves required for prolonged or repeated contact. Use apron where contact is likely, and cream if skin contact is Likely. Remove & wash contaminated clothing before reuse. Wash hands.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S CODE: BS

-03

DATE OF PREPARATION- 1/27/86

TRADE NAME!

ROOTH STRIP

^{*}

EYE PROTECTION: Use safety eyeware designed to protect against splash of

SECTION IX-- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not store above 120 degree F. Do not freeze. Handle as a combustible liquid. Ground all containers when pouring.

OTHER PRECAUTIONS: Keep from freezing. Product stability may be affected. This material contains water & is electrically conductive. Do not apply by electrostatic spray equipment unless the equipment is modified and intended for the application of conductive coatings.

INFORMATION ON THIS FORM IS TO BE USED TO COMPLY WITH OSHA AND HEALTH REGULATIONS ONLY AND MAY NOT BE USED OR DISSEMINATED FOR ANY OTHER PURPOSE.



ZINC OXIDE

MATIERIAE SAFETY DATASHEET

1.11 Your Code: 9980 TRADE NAME ICOMMON NAME OR SYNONYM, AZO 11, AZO 22, AZO 33, AZO 55, AZO 55 P. AZO 55 LO. AZO 55 TT, AZO 55 PTT, AZO 88, AZOFLO 55, AZODOX 11, AZODOX 22, AZODOX 33, AZODOX 55, AZODOX 55 TT, AZODOX 55 LO CHEMICAL NAME ASARCO PRODUCT CODE # Zinc Oxide FORMULA MOLECULAR WEIGHT Zn O 81.38 ADDRESS (No., STREET, CITY, STATE AND ZIP CODE) ASARCO INCORPORATED 180 MAIDEN LANE PHONE: (212) 510-2000 NEW YORK. NEW YORK 10038 CONTACT PHONE NUMBER ISSUED DATE REVISED DATE General Information -2/17/83 2/17/83 Department of Environmental Sciences DAY 801-262-2459
NIGHT 801-943-1754
First Aid Information - (Dr. C. H. Hine) DAY 415-777-2213
NIGHT 415-777-2214

B. INGREDIENTS

Transportation Emergencies - CHEMTREC

	MATERIAL OR COMPONENT	C.A.S. #	WT. %	PERMISSIBLE AIR CONCENTRATION		
Zinc ox	ide	1314-13-2	99.2	5.0 mg/cu.mfume 15.0 mg/cu.mdust		
		HMIS H = 1 F = 0 R = 0				
		PPE = E		X: OSHA (ACGIH		

800-424-9300

C. FIRST AID MEASURES

Inhalation: Symptomatic treatment such as bed rest and aspirin may afford some relief

from chills and fever. Recovery is usually complete in 24 hours.

If symptoms persist, consult a physician.

Ingestion: Induce vomiting in conscious individual and call a physician.

INHALATION

Metal fume fever with symptoms of fever, chills, metallic taste, chest tightness or nausea may result from inhalation of zinc oxide fume or dust.

Linc oxide is relatively non-toxic by mouth, but may cause fever, nausea. stomach cramps or diarrhea in large doses.

SKIN

Dermatitis (papulopustular eczema) with intense itching may result from excessive skin contact. EYES

Mechanical irritation

MEDICAL CONDITIONS POSSIBLY AGGRAVATED

None reported

UNUSUAL CHRONIC TOXICITY

None reported

FIRE AND EXPLOSION

FLASH POINT

°C AUTO IGNITION

°C FLAMMABLE LIMITS IN AIR (% BY VOL.)

NOT APPLICABLE

TEMPERATURE NOT APPLICABLE □OPEN CUP □ CLOSED CUP

NOT APPLICABLE

UNUSUAL FIRE AND EXPLOSION HAZARDS

NOT APPLICABLE

E. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

so specific agents recommended.

FIRE EXTINGUISHING AGENTS TO AVOID

No specific agents.

SPECIAL FIRE FIGHTING PRECAUTIONS

Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing if involved in fire.

ENGINEERING CONTROLS

Local exhaust ventilation may be required in dust generating operations to keep dust below permissible exposure levels.

NORMAL HANDLING

Use of approved respirators is required for applications where adequate ventilation cannot be provided. Bulk dust handling requires the use of full protective clothing.

SPILL OR LEAK

Any method which keeps dust to a minimum is acceptable. Vacuuming is preferred. Use approved respiratory protection if possibility of dust/fume exposure exists. Do not used compressed air for cleaning.

SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

Label signal word:

PERSONAL HYGIENE

Avoid inhalation or ingestion. Practice good housekeeping and personal hygiene procedures. A shower is recommended if significant dust exposure occurs.

विश्वतिकाञ्जाप्य नगणि विश्वविकाणि ।		•
RESPIRATORY PHOTECTION		
יש מאר	for dust and/or fume	
Jany Halla approved respirator	10; dust and/or rame.	
EYES AND FACE		
		t mantial on in anna anich
Safety glasses recommended whe	re the possibility of getting dus	t particles in eyes exists.
HANDS, ARMS, AND BODY		
		·
Gloves or other protective clo	thing required if skin contact is	appreciable.
OTHER CLOTHING AND EQUIPMENT		<u> </u>
	equired for bulk dust handling.	·
GP PHYSICAL DAFA		
MATERIAL IS (AT NORMAL CONDITIONS):	APPEARANCE AND ODOR	
☐ LIQUID X SOLID ☐ GAS		
Eldold & Social GAS	White powder, odorless	
BOILING POINT	SPECIFIC GRAVITY	VAPOR DENSITY
	$(H_2O = 1)$	(AIR = 1)
MELTING POINT Sublimes at 1975 C	5.6	NOT APPLICABLE
SOLUBILITY IN WATER	pH	VAPOR PRESSURE
(°6 by Weight)	μn	(mm Hg at 20° C) (PSIG)
INSOLUBLE	NOT APPLICABLE	NOT APPLICABLE
EVAPORATION RATE (Butyl Acetate = 1) (Ether = 1)	% VOLATILES BY VOLUME (At 20° C)	
NOT APPLICABLE	NOT APPLICABLE	
SHEAD IN THE CONTRACTOR		
STABILITY	CONDITIONS TO AVOID	
STABLETT	CONDITIONS TO AVOID	•
UNSTABLE X STABLE	NOT APPLICABLE	
INCOMPATIBILITY (MATERIALS TO AVOID)		
	react explosively when heated	
Zinc oxide has been reported the chlorinated rubber batch in or	react explosively when heated. to cause violent explosion when mi	xed in a
	ic instance.	
HAZARDOUS DECOMPOSITION PRODUCTS		
None		
AZARDOUS POLYMERIZATION	CONDITIONS TO AVOID	
MAY OCCUR X WILL NOT OCCUR	NOT APPLICABLE	
WILL NOT OCCUR		-

EPA HAZARDOUS SUBSTANCE?

X IF SO, REPORTABLE QUANTITY: YES NO

40 CFR 118-117

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)

If hazardous under 40 CFR 261, Subparts B and C, material must be treated or disposed in a facility meeting the requirements of 40 CFR 264 or 265. If non-hazardous, material should be disposed in a facility meeting the requirements of 40 CFR 257.

RCRA STATUS OF UNUSED MATERIAL:

40 CFR 261

If discarded in unaltered form, material should be tested to determine if it must be classified as a hazardous waste for disposal purposes. Under specific circumstances, application can be made to the EPA Aministrator to have a particular waste designated non-hazardous.

L REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

OSHA regulations for airborne contaminants 29 CFR 1910.1000

HAZARD INFORMATION REFERENCES

"Documentation of the Threshold Limit Values," 4th Ed., ACGIH Patty's Industrial Hygiene and Toxicology, Vol. 2A, 3rd Rev. Ed., NFPA "Fire Protection Guide on Hazardous Materials," 6th Ed., 1975 Hamilton, A. and Hardy, H., "Industrial Toxicology" 3rd ed., 1974 "Registry of Toxic Effects of Chemical Substances," NIOSH, 1980.

"Handbook of Toxic and Hazardous Chemicals"; Sittig, Marshall; Noyes Publications, 1981. BENERAL

"Handbook of Chemistry and Physics, 57th Ed.," 1976-77, Weast, R.C., Editor, CRC Inc.

K ADDITIONAL INFORMATION

Information (hazards, precautions, first aid, etc.) is abbreviated. More detailed information is contained in references found in Section J.

Additional Information Contact: Zinc Oxide Sales Department ASARCO, Inc

1363 Windsor Avenue P.O. Box 327 Columbus, Ohio 43216 614-294-5566

ZINC STEARATE

Material Safety Data Sheet

Mallinckrodt, Inc. P.O. Box 5480 St. Louis, Mo. 63134

Emergency Telephone No. 314-982-5000

Effective Date: July 19, 1985

F-0

Product Identification:

Synonyms:

Dibasic Zinc Stearate, Stearic Acid Zinc Salt,

Octadecanoic Acid Zinc Salt

CAS Number:

557-05-1

Molecular Weight:

632.2 (Pure)

Chemical Formula: Zn(C₁₈H₃₅O₂)₂

Hazardous Ingredients: Zinc Stearate

ACGIH Listed

The exact product composition depends on purity of tallow used.

PRECAUTIONARY INFORMATION

CAUTION! MAY FORM COMBUSTIBLE DUST CONCENTRATION IN AIR. NUISANCE DUST Store in a well enclosed container.

Avoid dust cloud in presence of ignition smoke.

Maintain adequate ventilation.

As part of good industrial and personal hygiene and safety procedures, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SEE SECTION 5.

DOT Hazard Class: Not Regulated.

Physical Data

SECTION 1

Appearance: Fine, soft white powder

Slight odor of fatty acid.

Solubility: Insoluble in water, alcohol, ether; slightly soluble in benzene.

Boiling Point:

Decomposes

Vapor Density:

Not Applicable

Melting Point:

120-130°C;

Vapor Pressure:

Not Applicable

(248-266°F)

Specific Gravity: 1.095

5-3/MSDS/zst

Fire and Explosion Information *

SECTION 2

Fire:

Minimum dust cloud ignition temperature: 690°C (1274°F)

Autoignition temperature: 790°C (1454°F) Flash Point: 279°C (534°F) (Open Cup)

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Minimum explosible concentration:
0.02 g/l (air). (Bureau of Mines, 1968)
Maximum explosion pressure: 68 lb/in²
@ 0.3 ounces per cubic foot.
Water spray, foam, CO₂, dry chemical.

Water or foam may cause frothing.

Special Information:

Fire Extinguishing Media:

In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus, full face-piece operated in the pressure demand or other positive pressure mode.

Pressure from the extinguishing media may cause severe dusting. Helted fatty acid can give "grease" type fire.

*Explosion hazards apply only to dusts, not to granular forms of this product. Actual temperatures and concentrations may vary by product composition.

Reactivity Data

SECTION 3

Stability:

Stable under normal conditions of use and storage.

Hazardous Decomposition

Products:

Burning may produce carbon monoxide or

zinc oxide fumes.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers, strong alkalies, peroxides, oxygen, acids.

Leak/Spill Disposal Information

SECTION 4

Product Clean-up:

Remove all sources of ignition. Ventilate area of leak or spill. Clean up personnel may require protection from inhalation of dust.

Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools. Pick up spill for recovery or disposal and place in a closed container.

Disposal:

Whatever cannot be saved for recovery may be burned in an approved incinerator or disposed in an approved landfill.

Ensure compliance with local, state and federal regulations.

5-8/MSDS/zst

Health Hazard Information
A. Exposure/Health Effects

SECTION 5

Inhalation:

Symptoms from excessive inhalation of dust may include coughing and difficult breathing.

Ingestion:

Large doses may cause abdominal spasms and diarrhea.

· Shipton Long Sill

Skin Contact:

Not appreciably irritating to the skin, nor readily absorbed through the skin, but constant exposure to excessive amounts may cause eczema.

Eye Contact:

May cause redness, pain.

Chronic Exposure:

Grossly excessive and chronic inhalation of the dust may cause a progressive chemical pneumonitis, cyanosis, and pulmonary edema.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders, impaired respiratory function, or a history of pulmonary disease should not be exposed to dusts.

B. FIRST AID Inhalation:

Remove to fresh air. Get medical help for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to to dilute. If large amounts were swallowed, get medical advice.

Skin Exposure:

Wash exposed area with soap and water. Get medical attention if irritation develops or persists.

Eye Exposure:

Wash eyes with plenty of water for at least 15 minutes. If irritation persists, get medical attention.

C. Toxicity Data

No information found relating to normal routes of exposure.

Occupational Control Measures

SECTION 6

Airborne Exposure Limit:

- ACGIH Threshold Limit Value (TLV): 10 mg/m³ (TWA); 20 mg/m³ (STEL) (nuisance dust)

Ventilation System:

A system of local exhaust is recommended to keep employee exposures below the airborne exposure limits. Local exhaust ventilation is generally preferred because it can control the emissions of the dust at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators: (NIOSH Approved)

If the TLV is exceeded, wear NIOSH approved dust respirator and chemical safety goggles. In general this is satisfactory protection up to ten times the TLV. Consult respirator manufacturer for limitations.

Skin Protection:

Gloves and lab coat, apron or coveralls.

Eye Protection:

Chemical safety goggles. Contact lenses should not be worn when working with this material.

Maintain eyewash fountain and quick drench facilities in work area.

Storage and Special Information SECTION 7

Store in a cool dry place. Protect from physical damage. Avoid dust dispersal.

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CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

State of Michigan

County of Oakland

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response) to EPA Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I am also aware that my company is under a continuing obligation to supplement its response to EPA's Request for Information if any additional information relevant to the matters addressed in EPA's Request for Information of the company's response thereto should become known or available to the company.

<u>David Van Maele</u> NAME (type or print)

Vice President

TITLE (type or print)

SIGNATURE

Sworn to before me on this $\underline{\times}$

of January, 2003

CHARLOTTA T. DANKO Notary Public, Oakland County, MI My Commission Expires Feb. 20, 2006

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